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Attorneys for Plaintiffs Philips Lighting
North America Corporation; and Philips
Lighting Holding B.V.

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA, WESTERN DIVISION

PHILIPS LIGHTING NORTH
AMERICA CORPORATION and
PHILIPS LIGHTING HOLDING B.V.

Plaintiffs,

v.

DECO ENTERPRISES, INC. (d/b/a
DECO LIGHTING),

Defendant.

CASE NO. 2:17-cv-04995-R-AGR

**FIRST AMENDED COMPLAINT
FOR PATENT INFRINGEMENT**

Trial Date: None Set

JURY TRIAL DEMANDED

Plaintiffs Philips Lighting North America Corporation and Philips Lighting
Holding B.V. (collectively, "Philips Lighting") for their first amended complaint
against Deco Enterprises, Inc. (d/b/a Deco Lighting) ("Defendant") allege as
follows:

1 **NATURE OF THE ACTION**

2 1. This is a civil action for patent infringement arising under the patent
3 laws of the United States, 35 U.S.C. § 1 *et seq.*, including 35 U.S.C. § 271, which
4 gives rise to the remedies specified under 35 U.S.C. §§ 281 and 283-285. This
5 Court has subject-matter jurisdiction over this patent infringement action pursuant to
6 28 U.S.C. §§ 1331 and 1338.

7 **THE PARTIES**

8 2. Plaintiff Philips Lighting North America Corporation is a corporation
9 organized and existing under the laws of Delaware, is registered to do business in
10 the Commonwealth of Massachusetts, and has a place of business and resides at 3
11 Burlington Woods Drive, Burlington, Massachusetts 01803.

12 3. Plaintiff Philips Lighting Holding B.V. is a corporation organized and
13 existing under the laws of the Netherlands with its principal place of business at
14 High Tech Campus 45, 5656 AE Eindhoven, The Netherlands.

15 4. On information and belief, Defendant Deco Enterprises, Inc. (d/b/a
16 Deco Lighting) is a corporation organized and existing under the laws of California
17 with its principal place of business at 2917 Vail Avenue, Commerce, California
18 90040.

19 **JURISDICTION AND VENUE**

20 5. This Court has subject-matter jurisdiction over this patent infringement
21 action pursuant to 28 U.S.C. §§ 1331 and 1338.

22 6. On information and belief, Defendant has made, used, provided, sold,
23 offered to sell, imported, and/or distributed to others for such purposes, lighting
24 products and systems employing light-emitting diodes (“LEDs”) for illumination
25 throughout the United States, including California. For example, on information and
26 belief, Defendant’s products are offered and sold in California through at least
27 Integrated Lighting and Ewing-Foley, Inc., as listed on Defendant’s website
28 (<https://www.getdeco.com/agent-locator>).

7. This Court has personal jurisdiction over Defendant because, on information and belief, Defendant has regularly and systematically transacted business in this district, directly or through intermediaries, and/or committed acts of infringement in this district. Defendant has also placed infringing products into the stream of commerce by shipping those products into this district or knowing that the products would be shipped into this district.

8. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1400(b). Defendant has stipulated that venue for this action is proper in the Central District of California. (Docket No. 11).

THE PATENTS-IN-SUIT

9. Philips Lighting is a global market leader with recognized expertise in the development, manufacturing, and application of innovative LED lighting solutions.

10. To protect its intellectual property resulting from its significant investments, Philips Lighting applied for and obtained numerous patents directed to various LED inventions and technologies. For example, Philips Lighting’s LED-related patents include U.S. Patent Nos. 6,094,014, 6,586,890, 7,038,399, 7,262,559, and 8,070,328 (collectively, the “Patents-in-Suit”).

11. U.S. Patent 6,094,014 (“the ’014 Patent”), titled “Circuit Arrangement, and Signaling Light Provided with the Circuit Arrangement,” was duly and legally issued by the United States Patent and Trademark Office on July 25, 2000. Plaintiff Philips Lighting North America Corporation is the assignee and owner of all right, title, and interest in the ’014 Patent, a copy of which is attached as Exhibit 1.

12. U.S. Patent 6,586,890 (“the ’890 Patent”), titled “Led Driver Circuit with PWM Output,” was duly and legally issued by the United States Patent and Trademark Office on July 1, 2003. Plaintiff Philips Lighting Holding B.V. is the assignee and owner of all right, title, and interest in the ’890 Patent, a copy of which is attached as Exhibit 2.

1 13. U.S. Patent 7,038,399 (“the ’399 Patent”), titled “Methods and
2 Apparatus for Providing Power to Lighting Devices,” was duly and legally issued by
3 the United States Patent and Trademark Office on May 2, 2006. Plaintiff Philips
4 Lighting North America Corporation is the assignee and owner of all right, title, and
5 interest in the ’399 Patent, a copy of which is attached as Exhibit 3.

6 14. U.S. Patent 7,262,559 (“the ’559 Patent”), titled “LEDs Driver,” was
7 duly and legally issued by the United States Patent and Trademark Office on August
8 28, 2007. Plaintiff Philips Lighting Holding B.V. is the assignee and owner of all
9 right, title, and interest in the ’559 Patent, a copy of which is attached as Exhibit 4.

10 15. U.S. Patent 8,070,328 (“the ’328 Patent”), titled “LED Downlight,”
11 was duly and legally issued by the United States Patent and Trademark Office on
12 December 6, 2011. Plaintiff Philips Lighting Holding B.V. is the assignee and
13 owner of all right, title, and interest in the ’328 Patent, a copy of which is attached
14 as Exhibit 5.

15 **DEFENDANTS’ EXEMPLARY INFRINGING PRODUCTS**

16 **A. LUCERA**

17 16. Defendant’s Lucera products are surface-mounted LED lighting
18 fixtures. According to Defendant, Lucera products are designed for use in stairwells,
19 utility rooms, and other areas requiring maximum light on a constant basis. On
20 information and belief, Defendant offers for sale and sells Lucera products in the
21 United States and this district.

22 17. Defendant provides a specification sheet for Lucera products on
23 Defendant’s website at [https://www.getdeco.com/wp-content/themes/deco-](https://www.getdeco.com/wp-content/themes/deco-digital/pdf/LUCERA_spec.pdf)
24 [digital/pdf/LUCERA_spec.pdf](https://www.getdeco.com/wp-content/themes/deco-digital/pdf/LUCERA_spec.pdf), a copy of which of which is attached as Exhibit 6.
25 The following image from Exhibit 6 shows a Lucera product:
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18. The LED driver of a 4' 24W 50K LED Lucera Series with Sensor was reverse-engineered by a third-party vendor, and the resulting schematics are attached as Exhibit 7. The LED driver includes a Power Integrations TOP245F integrated circuit, a datasheet for which is attached as Exhibit 8.

B. ZEUS

19. Defendant's Zeus products are architectural lighting wall packs. According to Defendant, Zeus products are designed for both interior and exterior lighting contexts. On information and belief, Defendant offers for sale and sells Zeus products in the United States and this district.

20. Defendant provides a specification sheet for Lucera products on Defendant's website at https://www.getdeco.com/wp-content/themes/deco-digital/pdf/ZEUS_spec.pdf, a copy of which is attached as Exhibit 9. The following image from Exhibit 9 shows a Zeus product:



21. The LED driver of a 20W ZEUS Oval LED was reverse-engineered by a third-party vendor, and the resulting schematics are attached as Exhibit 10. The

1 LED driver, produced by Thomas Research Products, includes an Infineon
 2 Technologies TDA4863-2G integrated circuit, a datasheet for which is attached as
 3 Exhibit 11. A photo of the name plate of the Thomas Research Products LED driver
 4 is attached as Exhibit 12. On information and belief, the Thomas Research Products
 5 driver is designed to receive a dimmed AC input.

6 **C. CLOUD**

7 22. Defendant's Cloud products are recessed LED luminaires. According to
 8 Defendant, Cloud products are designed for use in commercial settings including
 9 offices, healthcare, or retail environments. On information and belief, Defendant
 10 offers for sale and sells Cloud products in the United States and this district.

11 23. A copy of a specification sheet for Cloud products is attached as
 12 Exhibit 13. The following image from Exhibit 13 shows a Cloud product:



19 24. The LED Driver of a 59W 2x4 Digital LED Cloud Recessed Troffer
 20 was reverse-engineered by a third-party vendor, and the resulting schematics are
 21 attached as Exhibit 14. On information and belief, the LED driver, produced by
 22 Antron Compact Electronics and labeled "Watt Controls", includes an ST
 23 Microelectronics L6562 integrated circuit, a datasheet for which is attached as
 24 Exhibit 15. A photo of the name plate of the Watt Controls driver is attached as
 25 Exhibit 16.

26 **D. DLED-ARFK4**

27 25. Defendant's DLED-ARFK4 products are LED retrofit kits. According
 28 to Defendant, DLED-ARFK4 products are designed for use with existing 4"

1 architectural incandescent, fluorescent, and metal halide housings. On information
2 and belief, Defendant offers for sale and sells DLED-ARFK4 products in the United
3 States and this district.

4 26. Defendant provides a specification sheet for DLED-ARFK4 products
5 on Defendant's website at [https://www.getdeco.com/wp-content/themes/deco-](https://www.getdeco.com/wp-content/themes/deco-digital/pdf/DLED-ARFK4_spec.pdf)
6 [digital/pdf/DLED-ARFK4_spec.pdf](https://www.getdeco.com/wp-content/themes/deco-digital/pdf/DLED-ARFK4_spec.pdf), a copy of which is attached as Exhibit 17. The
7 following image from Exhibit 17 shows a DLED-ARFK4 product:



17 27. The LED driver of a DLED-ARFK4 4" 14W Architectural LED
18 Retrofit-Kit was reverse-engineered by a third-party vendor, and the resulting
19 schematics are attached as Exhibit 18. On information and belief, the LED driver
20 includes an On-Bright SN03A integrated circuit.

21 **E. DSW-LED**

22 28. Defendant's DSW-LED products are LED light sources. According to
23 Defendant, DSW-LED products are designed for indoor commercial uses. On
24 information and belief, Defendant offers for sale and sells DSW-LED products in
25 the United States and this district.

26 29. Defendant provides a specification sheet for DSW-LED products on
27 Defendant's website at <https://www.getdeco.com/wp-content/themes/deco->
28

1 [digital/pdf/DSW-LED_spec.pdf](#), a copy of which is attached as Exhibit 19. The
 2 following image from Exhibit 19 shows a DSW-LED product:

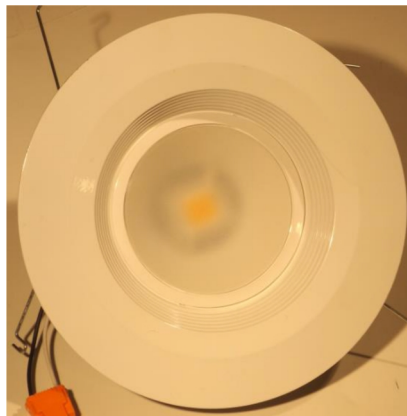


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 9 30. The LED driver of a DSW-LED 2' 22W Narrow LED Surface
 10 Wraparound was reverse-engineered by a third-party vendor, and the resulting
 11 schematics are attached as Exhibit 20. The LED driver, produced by Thomas
 12 Research Products, includes an ST Microelectronics L6562 integrated circuit, a
 13 datasheet for which is attached as Exhibit 21. A photo of the name plate of the
 14 Thomas Research driver is attached as Exhibit 22.

15 **F. AFR56**

16 31. Defendant's AFR56 products are LED retrofit recessed lighting kits.
 17 According to Defendant, AFR56 products designed to replace existing incandescent
 18 fixtures. On information and belief, Defendant offers for sale and sells AFR56
 19 products in the United States and this district.

20 32. Photographs of an AFR56 6" Recessed Lamp are attached as Exhibit
 21 23. A representative photograph is shown for example below:

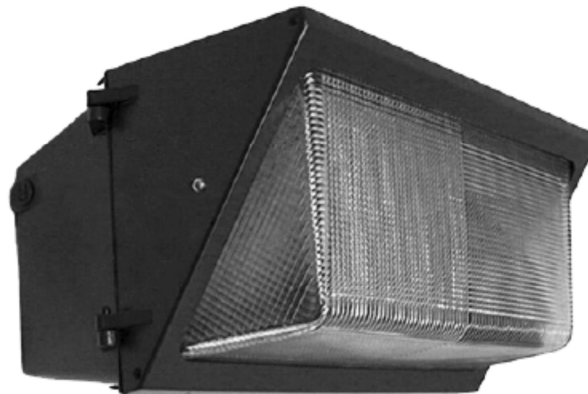


33. The LED driver of an AFR56 6" Recessed Lamp was reverse-engineered by a third-party vendor, and the resulting schematics are attached as Exhibit 24. A photo of the name plate of the LED driver is attached as Exhibit 25. On information and belief, the LED driver is configured to receive a dimmed AC signal.

G. D404-LED

34. Defendant's D404 wall packs are LED light sources. According to Defendant, D404 wall packs are designed for exterior use in commercial environments. On information and belief, Defendant offers for sale and sells D404 wall packs in the United States and this district.

35. Defendant provides a specification sheet for the D404-LED products on Defendant's website at https://www.getdeco.com/wp-content/themes/deco-digital/pdf/D404-LED_spec.pdf, a copy of which is attached as Exhibit 26. The following image from Exhibit 26 shows a D404-LED product:



36. The LED driver of a previous-generation D404 Wallpack (LED20W-36-C0550TE) was reverse-engineered by a third-party vendor, and the resulting schematics are attached as Exhibit 27. The LED driver, produced by Thomas Research Products, includes a Fremont Micro Devices FT822 integrated circuit, a datasheet for which is attached as Exhibit 28. A photo of the name plate of the Thomas Research driver is attached as Exhibit 29. On information and belief, the Thomas Research driver is designed to receive a dimmed AC input.

37. On information and belief, the LED driver of the current-generation D404 employs the same Watt Controls driver as the CLOUD products—the reverse-engineered schematics of which are attached as Exhibit 14. The Watt Controls driver includes an ST Microelectronics L6562 integrated circuit, a datasheet for which is attached as Exhibit 15. A photo of the name plate of the Watt Controls driver is attached as Exhibit 16.

H. D211-LED

38. Defendant's D211 products are medium round back flood LED light sources. According to Defendant, D211 products are designed for applications requiring flood lights such as parking lots, landscapes, and building facades. On information and belief, Defendant offers for sale and sells D211 products in the United States and this district.

39. Defendant provides a specification sheet for the D211-LED products on Defendant's website at https://www.getdeco.com/wp-content/themes/deco-digital/pdf/D211-LED_spec.pdf, a copy of which is attached as Exhibit 30. The following image from Exhibit 30 shows a D211-LED product:



40. On information and belief, D211-LED products employ the same Watt Controls driver as Cloud products—the reverse-engineered schematics of which are attached as Exhibit 14. The Watt Controls driver includes an ST Microelectronics L6562 integrated circuit, a datasheet for which is attached as Exhibit 15. A photo of the name plate of the Watt Controls driver is attached as Exhibit 16.

COUNT ONE

INFRINGEMENT OF U.S. PATENT NO. 6,094,014

41. Philips Lighting incorporates by reference the allegations in paragraphs 1-40 as if fully set forth herein.

42. On information and belief, Defendant has infringed and is infringing claims of the '014 Patent, including claim 1, in violation of 35 U.S.C. § 271(a) by manufacturing, using, offering to sell, selling, and/or importing infringing products.

43. Claim 1 of the '014 Patent recites:

1. A circuit arrangement suitable for operating a semiconductor light source, said circuit arrangement comprising:
input terminals for connecting a supply voltage;
input filter means;
a converter comprising a control circuit; and
output terminals for connecting the semiconductor light source, wherein said converter generates a current for application to said semiconductor light source, and said control circuit controls said converter to produce a predetermined value of said current at said output terminals, said predetermined value of said current corresponding to an output voltage which is less than a predetermined threshold voltage,
characterized in that the circuit arrangement further comprises voltage detection means for detecting the output voltage at the output terminals, said voltage detection means generating a detection signal when the output voltage exceeds said predetermined threshold voltage.

44. On information and belief, Defendant has directly infringed and is directly infringing claim 1 of the '014 Patent by making, using, offering to sell, selling, and/or importing at least Zeus, Cloud, DSW-LED, 211-LED, and D404-

1 LED (current generation) products in this judicial district and elsewhere in the
2 United States.

3 **Infringing Zeus Products**

4 45. On information and belief, Zeus products contain a circuit arrangement
5 for operating an LED light source, as shown for example in the schematics of
6 Exhibit 10. The individual components cited below refer to Exhibit 10 unless stated
7 otherwise.

8 46. On information and belief, Zeus products include input terminals for
9 connecting a supply voltage, for example Black Wire (L) and White Wire (N) that
10 connect to an AC mains input.

11 47. On information and belief, Zeus products include input filter means, for
12 example capacitor C1 and inductor L1 to filter the input.

13 48. On information and belief, Zeus products include a converter
14 comprising a control circuit, for example a flyback converter with transformer T1
15 and diode D5 that is controlled by a control circuit IC U1.

16 49. On information and belief, Zeus products include output terminals for
17 connecting the semiconductor light source, wherein the converter generates a
18 current for application to the semiconductor light source, and the control circuit
19 controls the converter to produce a predetermined value of the current at the output
20 terminals, the predetermined value of the current corresponding to an output voltage
21 which is less than a predetermined threshold voltage. For example, output terminals
22 Red Wire (+DC) and Black Wire (-DC) connect to the LEDs. The flyback converter
23 generates current applied to the LEDs. The flyback converter is controlled by IC U1
24 to deliver constant current (Exhibit 12, "Constant-Current Dimmable LED Driver")
25 to the output. The flyback converter output voltage +DC will be clamped at
26 approximately 42 V.

27 50. On information and belief, Zeus products include voltage detection
28 means for detecting the output voltage at the output terminals, the voltage detection

1 means generating a detection signal when the output voltage exceeds the
2 predetermined threshold voltage. For example, a voltage detection circuit includes
3 zener diodes D9 and D10, the voltage divider formed by R29 and R30, and
4 transistor Q3, that outputs a detection signal when the output voltage +DC exceeds
5 42 V—the breakdown voltage of series-connected Zener diodes D9 and D10. The
6 detection signal propagates through opto-isolator U3 and is input to IC U1 at
7 VSENSE pin 1 and VAOUT pin.

8 **Infringing Cloud Products**

9 51. On information and belief, Cloud products include a power supply for
10 an LED light source, as shown for example in the schematics of Exhibit 14. The
11 individual components of the Cloud products cited below refer to Exhibit 14 unless
12 stated otherwise.

13 52. On information and belief, Cloud products include input terminals for
14 connecting a supply voltage, for example input terminals Black Wire and White
15 Wire that connect to an AC mains input.

16 53. On information and belief, Cloud products include input filter means,
17 for example capacitor C1, C24, and inductors of transformer T1 that filter the AC
18 mains input.

19 54. On information and belief, Cloud products include a converter
20 comprising a control circuit, for example a flyback converter comprising
21 transformer T2 and diode D22 that is controlled by controllers IC U3 and transistor
22 Q3.

23 55. On information and belief, Cloud products include output terminals for
24 connecting the semiconductor light source, wherein the converter generates a
25 current for application to the semiconductor light source, and the control circuit
26 controls the converter to produce a predetermined value of the current at the output
27 terminals, the predetermined value of the current corresponding to an output voltage
28 which is less than a predetermined threshold voltage. For example, output terminals

1 Red Wire (LED1+) and Blue Wire (LED 1-) connect to the LEDs. The flyback
 2 converter generates current for application to the LEDs. The flyback converter is
 3 controlled by IC U3 to deliver one of three constant current values—700mA,
 4 1050mA, 1400mA—(Exhibit 16, “Output Current: WC3 700mA, WC2: 1050mA,
 5 WC3: 1400mA”) to the output. The flyback converter output voltage LED+ will be
 6 clamped at approximately 42 V.

7 56. On information and belief, Cloud products include voltage detection
 8 means for detecting the output voltage at the output terminals, the voltage detection
 9 means generating a detection signal when the output voltage exceeds the
 10 predetermined threshold voltage. For example, a voltage detection circuit includes
 11 diodes D13, D16, D24, D25, resistors R65 and R66, and transistor side of opto-
 12 isolator, that provides a detection signal when the output voltage exceeds the
 13 cumulative breakdown voltage of 42 V of the series-connected diodes D13, D16,
 14 D24, D25.

15 **Infringing DSW-LED Products**

16 57. On information and belief, DSW-LED products contain a circuit
 17 arrangement suitable for operating an LED light as shown for example in the
 18 schematics of Exhibit 20. The individual components of the DECO DSW-LED
 19 products cited below refer to Exhibit 20 unless stated otherwise.

20 58. On information and belief, DSW-LED products include input terminals
 21 for connecting a supply voltage, for example input terminals Black Wire (L) and
 22 White Wire (N) that connect to an AC mains input.

23 59. On information and belief, DSW-LED products include input filter
 24 means, for example, capacitor C1 and inductor L1, in part, filter the AC mains input.

25 60. On information and belief, DSW-LED products include a converter
 26 comprising a control circuit, for example a flyback converter comprising
 27 transformer T1 and diode D7 that is controlled by a control circuit IC U1.
 28

1 61. On information and belief, DSW-LED products include output
2 terminals for connecting the semiconductor light source, wherein the converter
3 generates a current for application to the semiconductor light source, and the control
4 circuit controls the converter to produce a predetermined value of the current at the
5 output terminals, the predetermined value of the current corresponding to an output
6 voltage which is less than a predetermined threshold voltage. For example, output
7 terminals Red Wire and Blue Wire connect to the LEDs. The flyback converter,
8 comprising transformer T1 and diode D7, generates current applied to the LEDs.
9 The flyback converter is controlled by IC U1 to deliver constant current (Exhibit 22,
10 “25W Constant-Current Dimmable LED Driver”) to the output. Flyback converter
11 output voltage +DC will be clamped at approximately 42 V.

12 62. On information and belief, DSW-LED products include voltage
13 detection means for detecting the output voltage at the output terminals, the voltage
14 detection means generating a detection signal when the output voltage exceeds the
15 predetermined threshold voltage. For example, a voltage detection circuit includes
16 zener diodes D17, D18, and D19, the voltage divider formed by R51 and R52, and
17 transistor-side of opto-isolator U6, outputs a detection signal when the output
18 voltage +Vo exceeds 42 V—the breakdown voltage of series-connected Zener
19 diodes D17, D18, and D19. The detection signal is input to INV pin 1 and COMP
20 pin 2 of IC U1.

21 **Infringing D211-LED Products**

22 63. On information and belief, 211-LED products include a power supply
23 for an LED light source, as shown for example in the schematics of Exhibit 14. The
24 individual components of 211-LED products cited below refer to Exhibit 14 unless
25 stated otherwise.

26 64. On information and belief, 211-LED products include input terminals
27 for connecting a supply voltage, for example input terminals Black Wire and White
28 Wire that connect to an AC mains input.

1 65. On information and belief, 211-LED products include input filter
2 means, for example capacitor C1, C24, and inductors of transformer T1 that filter
3 the AC mains input.

4 66. On information and belief, 211-LED products include a converter
5 comprising a control circuit, for example a flyback converter comprising
6 transformer T2 and diode D22 that is controlled by controllers IC U3.

7 67. On information and belief, 211-LED products include output terminals
8 for connecting the semiconductor light source, wherein the converter generates a
9 current for application to the semiconductor light source, and the control circuit
10 controls the converter to produce a predetermined value of the current at the output
11 terminals, the predetermined value of the current corresponding to an output voltage
12 which is less than a predetermined threshold voltage. For example, output terminals
13 Red Wire (LED1+) and Blue Wire (LED 1-) connect to LEDs. The flyback
14 converter generates current for application to the LEDs. The flyback converter is
15 controlled by IC U3 to deliver one of three constant current values—700mA,
16 1050mA, 1400mA—(Exhibit 16 “Output Current: WC3 700mA, WC2: 1050mA,
17 WC3: 1400mA”) to the output. The flyback converter output voltage LED+ will be
18 clamped at approximately 42 V.

19 68. On information and belief, 211-LED products include voltage detection
20 means for detecting the output voltage at the output terminals, the voltage detection
21 means generating a detection signal when the output voltage exceeds the
22 predetermined threshold voltage. For example, a voltage detection circuit,
23 comprising diodes D13, D16, D24, D25, resistors R65 and R66, and transistor side
24 of opto-isolator, provides a detection signal when the output voltage exceeds the
25 cumulative breakdown voltage of 42 V of the series-connected diodes D13, D16,
26 D24, D25.

Infringing D404-LED (Current Generation) Products

69. On information and belief, D404-LED products include a power supply for an LED light source, as shown for example in the schematics of Exhibit 14. The individual components cited below refer to Exhibit 14 unless stated otherwise.

70. On information and belief, D404-LED products include input terminals for connecting a supply voltage, for example Black Wire and White Wire that connect to an AC mains input.

71. On information and belief, D404-LED products include input filter means, for example capacitor C1, C24, and inductors of transformer T1 that filter the AC mains input.

72. On information and belief, D404-LED products include a converter comprising a control circuit, for example a flyback converter comprising transformer T2 and diode D22.

73. On information and belief, D404-LED products include output terminals for connecting the semiconductor light source, wherein the converter generates a current for application to the semiconductor light source, and the control circuit controls the converter to produce a predetermined value of the current at the output terminals, the predetermined value of the current corresponding to an output voltage which is less than a predetermined threshold voltage. For example, output terminals Red Wire (LED1+) and Blue Wire (LED 1-) connect to LEDs. The flyback converter generates current for application to the LEDs. The flyback converter is controlled by IC U3 to deliver one of three constant current values—700mA, 1050mA, 1400mA—(Exhibit 16, “Output Current: WC3 700mA, WC2: 1050mA, WC3: 1400mA”) to the output. The flyback converter output voltage LED+ will be clamped at approximately 42 V. On information and belief, D404-LED products include voltage detection means for detecting the output voltage at the output terminals, the voltage detection means generating a detection signal when the output voltage exceeds the predetermined threshold voltage. For example, a

1 voltage detection circuit, comprising diodes D13, D16, D24, D25, resistors R65 and
2 R66, and transistor side of opto-isolator, provides a detection signal when the output
3 voltage exceeds the cumulative breakdown voltage of 42 V of the series-connected
4 diodes D13, D16, D24, D25.

5 74. The full extent of Defendant's infringement is not presently known to
6 Philips Lighting. On information and belief, Defendant has made and sold, or will
7 make and sell, products under different names or part numbers that infringe the '014
8 Patent in a similar manner. Philips Lighting makes this preliminary identification of
9 infringing products and infringed claims in Count One without the benefit of
10 discovery or claim construction in this action, and expressly reserves the right to
11 augment, supplement, and revise its identifications based on additional information
12 obtained through discovery or otherwise.

13 75. Philips Lighting has suffered and continues to suffer damages as a
14 result of Defendant's infringement of the '014 Patent in an amount to be determined
15 at trial.

16 76. Defendant's infringement of the '014 Patent is causing irreparable harm
17 for which Philips Lighting has no adequate remedy at law unless Defendant is
18 enjoined by this Court. Under 35 U.S.C. § 283, Philips Lighting is entitled to a
19 permanent injunction against further infringement of the '014 Patent.

20 77. Defendant has been aware of and has had notice of the '014 Patent and
21 its infringement of the '014 Patent at least as early as the service of this Complaint.

22 **COUNT TWO**

23 **INFRINGEMENT OF U.S. PATENT NO. 6,586,890**

24 78. Philips Lighting incorporates by reference the allegations in paragraphs
25 1-77 as if fully set forth herein.

26 79. On information and belief, Defendant has infringed and is infringing
27 claims of the '890 Patent, including claims 7 and 31, in violation of 35 U.S.C. §
28

1 271(a) by manufacturing, using, offering to sell, selling, and/or importing infringing
2 products.

3 80. Claim 7 of the '890 Patent recites:

4 A system for supplying power for an LED array, said system
5 comprising:

6 means for sensing current to the LED array, said current
7 sensing means generating a sensed current signal;

8 means for generating a reference signal;

9 means for comparing the sensed current signal to the
10 reference signal, said comparing means generating a feedback
11 signal;

12 means for modulating pulse width responsive to the
13 feedback signal, said pulse width modulating means generating a
14 drive signal; and

15 means for supplying power responsive to the drive signal,
16 said power supplying means supplying current to the LED array.

17 81. On information and belief, Defendant has directly infringed and is
18 directly infringing claim 7 of the '890 Patent by making, using, offering to sell,
19 selling, and/or importing at least Lucera, Zeus, DLED-ARFK4, DSW-LED, and
20 D404-LED (previous generation) products in this judicial district and elsewhere in
21 the United States.

22 **Infringing Lucera Products**

23 82. On information and belief, Lucera products contain a power supply for
24 an LED light source as shown for example in the schematics of Exhibit 7. The
25 individual components cited below refer to Exhibit 7 unless stated otherwise.

26 83. On information and belief, Lucera products include means for sensing
27 current to the LED array, the current sensing means generating a sensed current
28 signal. For example, current sense resistors R15 and R16 generate a sensed current

1 signal that is proportional to the current through the LEDs. Sensed current signal is
2 propagated through transistor Q2, opto-coupler U2, and transistor Q1, and appears at
3 pin 1 of IC U1.

4 84. On information and belief, Lucera products include means for
5 generating a reference signal. For example, a reference current source, 4.8 V – 5.8 V
6 is applied to the inverting input of Internal UV Comparator (Exhibit 8).

7 85. On information and belief, Lucera products include means for
8 comparing the sensed current signal to the reference signal, the comparing means
9 generating a feedback signal. For example, Interval UV Comparator (Exhibit 8)
10 compares the sensed current signal—signal from R15 and R16 which appears at the
11 non-inverting input of UV Comparator—to the 4.8-5.8 V reference signal. The
12 output of Internal UV Comparator is a feedback signal that is applied to Gate Driver
13 (“PWM IC”) (Exhibit 8) via Shutdown/Auto-Restart Unit (Exhibit 8).

14 86. On information and belief, Lucera products include means for
15 modulating pulse width responsive to the feedback signal, the pulse width
16 modulating means generating a drive signal. For example, Gate Driver PWM
17 Control IC (Exhibit 8) generates a drive signal that is applied to the gate of the
18 switch (Exhibit 8). Gate Driver is responsive to the feedback signal output from
19 Internal UV Comparator, which propagates through Shutdown/Auto-Restart Unit
20 (Exhibit 8).

21 87. On information and belief, Lucera products include means for
22 supplying power responsive to the drive signal, the power supplying means
23 supplying current to the LED array. For example, a flyback converter, comprised of,
24 at least, transformer T2, diode D11, provides current to the LEDs connected to
25 outputs labeled Red Wire and Black Wire. The flyback converter is responsive to a
26 gate drive signal output applied to the gate of switch (Exhibit 8).

Infringing Zeus Products

88. On information and belief, Zeus products contain a power supply for an LED light array, as shown for example in schematics of Exhibit 10. The individual components cited below refer to Exhibit 10 unless stated otherwise.

89. On information and belief, Zeus products include means for sensing current to the LED array, the current sensing means generating a sensed current signal. For example, current sense resistor R35 generates a sensed current signal that is proportional to the current through the LEDs. The current sense signal is applied to the inverting input of comparator U2B.

90. On information and belief, Zeus products include means for generating a reference signal. For example, a reference current source, resistors R44 and R26, generate a reference signal that is applied to the non-inverting input of comparator U2B.

91. On information and belief, Zeus products include means for comparing the sensed current signal to the reference signal, the comparing means generating a feedback signal. For example, the voltage across R35—representative of the current through the LEDs—and a reference current source are applied to the inverting and non-inverting terminals of comparator U2B, respectively. The output of comparator U2B is a feedback signal that is applied, via diode D8 and opto-isolator U3 to the VSENSE, pin 1 of IC U1.

92. On information and belief, Zeus products include means for modulating pulse width responsive to the feedback signal, the pulse width modulating means generating a drive signal. For example, IC U1 is a PWM control IC that creates a PWM drive signal, (GTDRV signal) driving switch Q1. The PWM drive signal is responsive to the feedback signal applied to VSENSE, pin 1, of IC U1.

93. On information and belief, Zeus products include means for supplying power responsive to the drive signal, the power supplying means supplying current to the LED array. For example, a flyback converter, comprised of, at least,

1 transformer T1 diode D5, provides current to LEDs, attached at outputs Red Wire
2 (+DC) and Black Wire (GND). The flyback converter is responsive to a gate drive
3 signal applied to the gate of transistor Q1.

4 **Infringing DLED-ARFK4 Products**

5 94. On information and belief, ARFK4 products include a power supply for
6 an LED light source, as shown for example in the schematics of Exhibit 18. The
7 individual components cited below refer to Exhibit 18 unless stated otherwise.

8 95. On information and belief, ARFK4 products include means for sensing
9 current to the LED array, the current sensing means generating a sensed current
10 signal. For example, current sense resistor RS3 senses and generates a current
11 sensed signal (“-VO”) proportional to the current flowing through the LEDs. On
12 information and belief, the current sensed signal is applied to Resistor RS5
13 propagates through opto-isolator PC1, appearing at the inverting terminal of Error
14 Amplifier comparator of ICM1.

15 96. On information and belief, ARFK4 products include means for
16 generating a reference signal. For example, on information and belief, a reference
17 current source generates a reference signal of 2.5 volts to the non-inverting input of
18 Error Amplifier comparator.

19 97. On information and belief, ARFK4 products include means for
20 comparing the sensed current signal to the reference signal, the comparing means
21 generating a feedback signal. For example, on information and belief, the voltage
22 across RS3—representative of the current through the LEDs—and a reference
23 current source are applied to the inverting and non-inverting terminals of Error
24 Amplifier comparator, respectively. On information and belief, the output of Error
25 Amplifier comparator is a feedback signal that propagates to PWM control IC.

26 98. On information and belief, ARFK4 products include means for
27 modulating pulse width responsive to the feedback signal, the pulse width
28 modulating means generating a drive signal. For example, on information and belief,

1 PWM control IC of ICM1 receives the feedback signal and generates a pulse-width
2 modulated drive signal, which is applied to the gate of transistor QM2.

3 99. On information and belief, ARFK4 products include means for
4 supplying power responsive to the drive signal, the power supplying means
5 supplying current to the LED array. For example, a flyback converter including
6 transformer T1, diode DS1 supplies current to Red Wire (L+) and Black Wire (L-)
7 connected to LEDs. The flyback converter is responsive to a gate drive signal
8 applied to the gate of transistor QM2.

9 **Infringing DSW-LED Products**

10 100. On information and belief, DSW-LED products contain a power supply
11 for an LED light as shown for example in the schematics of Exhibit 20. The
12 individual components cited below refer to Exhibit 20 unless stated otherwise.

13 101. On information and belief, DSW-LED products include means for
14 sensing current to the LED array, the current sensing means generating a sensed
15 current signal. For example, current sense resistor R25 generates a sensed current
16 signal that is proportional to the current through the LEDs. The current sense signal
17 is applied to the inverting input of comparator U3B.

18 102. On information and belief, DSW-LED products include means for
19 generating a reference signal. For example, Violet Wire (PWM/Dimmer Control
20 Input) generates a reference signal that is applied to the non-inverting input of
21 comparator U3B.

22 103. On information and belief, DSW-LED products include means for
23 comparing the sensed current signal to the reference signal, the comparing means
24 generating a feedback signal. For example, the voltage across R25 —representative
25 of the current through the LEDs—and a reference current source are applied to the
26 inverting and non-inverting terminals of comparator U3B, respectively. The output
27 of comparator U3B is a feedback signal that is applied, via diode D9 and opto-
28 isolator U2, to the INV pin 1 of IC U1.

104. On information and belief, DSW-LED products include means for modulating pulse width responsive to the feedback signal, the pulse width modulating means generating a drive signal. For example, IC U1 is a PWM control IC that creates a PWM drive signal, (GD signal) driving transistor Q1. The PWM drive signal is responsive to the feedback signal applied to INV pin 1 of IC U1.

105. On information and belief, DSW-LED products include means for supplying power responsive to the drive signal, the power supplying means supplying current to the LED array. For example, a flyback converter, comprising at least transformer T1, diode D7, provides current to LEDs, attached at outputs Red Wire and Blue Wire. The flyback converter is responsive to a gate drive signal applied to the gate of transistor Q1.

Infringing D404-LED (Previous Generation) Products

106. On information and belief, D404 products contain a power supply for an LED light source as shown for example in the schematic of Exhibit 27. The individual components cited below refer to Exhibit 27 unless stated otherwise.

107. On information and belief, D404 products include means for sensing current to the LED array, the current sensing means generating a sensed current signal. For example, current sense resistor R25, generates a sensed current signal that is proportional to the current through the LEDs. The current sense signal is applied to the inverting input of comparator U2B.

108. On information and belief, D404 products include means for generating a reference signal. For example, reference signal Vs is applied via R25, U5, and R27 to the non-inverting input of comparator U2B.

109. On information and belief, D404 products include means for comparing the sensed current signal to the reference signal, the comparing means generating a feedback signal. For example, the voltage across R25—representative of the current through the LEDs—and a reference current source are applied to the inverting and non-inverting terminals of comparator U2B, respectively. The output of comparator

1 U2B is a feedback signal that is applied, via diode D6 and opto-isolator U3 to the
2 FB pin 1 of IC U1.

3 110. On information and belief, D404 products include means for
4 modulating pulse width responsive to the feedback signal, the pulse width
5 modulating means generating a drive signal. For example, IC U1 is a PWM control
6 IC that creates a PWM drive signal, (GATE signal) driving switch Q1. The PWM
7 drive signal is responsive to the feedback signal applied to FB pin 1 of IC U1.

8 111. On information and belief, D404 products include means for supplying
9 power responsive to the drive signal, the power supplying means supplying current
10 to the LED array. For example, a flyback converter, comprised of, at least,
11 transformer T1 diode D5, provides current to LEDs, attached at outputs Red Wire
12 (+DC) and Black Wire (GND). The flyback converter is responsive to a gate drive
13 signal applied to the gate of transistor Q1.

14 112. Claim 31 (including the limitations of claim 23) of the '890 Patent
15 requires:

16 A circuit for supplying power to an LED array comprising:

17 a power supply 52, the power supply 52 supplying current
18 to the LED array 54 and being responsive to a drive signal;

19 a current sensor 60 for sensing current to the LED
20 array 54, the current sensor 60 generating a sensed current
21 signal;

22 a reference current source 62 for generating a reference
23 signal;

24 a comparator 58 for comparing the sensed current signal to
25 the reference signal, the comparator 58 generating a feedback
26 signal; and

27 a PWM control IC 56 responsive to the feedback signal,
28 the PWM control IC 56 generating the drive signal;

1 wherein said power supply is selected from a group
2 consisting of a buck-boost power supply, a boost power supply, a
3 buck power supply, and a flyback converter.

4 113. On information and belief, Defendant has directly infringed and is
5 directly infringing claim 31 of the '890 Patent by making, using, offering to sell,
6 selling, and/or importing at least Lucera, Zeus, DLED-ARFK4, DSW-LED, and
7 D404-LED (previous generation) products in this judicial district and elsewhere in
8 the United States.

9 **Infringing Lucera Products**

10 114. On information and belief, Lucera products contain a power supply for
11 an LED light source as shown for example in the schematics of Exhibit 7. The
12 individual components cited below refer to Exhibit 7 unless stated otherwise.

13 115. On information and belief, Lucera products include a power supply, the
14 power supply supplying current to the LED array and being responsive to a drive
15 signal. For example, a flyback converter, comprised of, at least, transformer T2 and
16 diode D11, provides current to the LEDs connected to outputs labeled Red Wire and
17 Black Wire. The flyback converter is responsive to a gate drive signal output applied
18 to the gate of switch.

19 116. On information and belief, Lucera products include a current sensor for
20 sensing current to the LED array, the current sensor generating a sensed current
21 signal. For example, current sense resistor resistors R15 and R16 generate a sensed
22 current signal that is proportional to the current through the LEDs. The sensed
23 current signal is propagated through transistor Q2, opto-coupler U2, and transistor
24 Q1, and appears at pin 1 of IC U1.

25 117. On information and belief, Lucera products include a reference current
26 source for generating a reference signal. For example, a reference current source,
27 4.8–5.8 V is applied to the inverting input of Internal UV Comparator (Exhibit 8).

1 118. On information and belief, Lucera products include a comparator for
2 comparing the sensed current signal to the reference signal, the
3 comparator generating a feedback signal. For example, Interval UV Comparator
4 (Exhibit 8) compares the sensed current signal—signal from R15 and R16 which
5 appears at the non-inverting input of UV Comparator—to the 4.8-5.8 V reference
6 signal. The output of Internal UV Comparator is a feedback signal that is applied to
7 Gate Driver (“PWM IC”) (Exhibit 8) via Shutdown/Auto-Restart Unit (Exhibit 8).

8 119. On information and belief, Lucera products include a PWM control
9 IC responsive to the feedback signal, the PWM control IC generating the drive
10 signal. For example, Gate Driver PWM Control IC (Exhibit 8) generates a drive
11 signal that is applied to the gate of the switch (Exhibit 8). Gate Driver is responsive
12 to the feedback signal output from Internal UV Comparator, which propagates
13 through Shutdown/Auto-Restart Unit (Exhibit 8).

14 120. On information and belief, Lucera products include a power supply
15 selected from a group consisting of a buck-boost power supply, a boost power
16 supply, a buck power supply, and a flyback converter. For example, a flyback
17 converter, comprised of, at least, transformer T2, diode D11, provides current to the
18 LEDs connected to outputs labeled Red Wire and Black Wire.

19 **Infringing Zeus Products**

20 121. On information and belief, Zeus products contain a power supply for an
21 LED light array, as shown for example in schematics of Exhibit 10. The individual
22 components cited below refer to Exhibit 10 unless stated otherwise.

23 122. On information and belief, Zeus products include a power supply, the
24 power supply supplying current to the LED array and being responsive to a drive
25 signal. For example, a flyback converter, comprised of, at least, transformer T1 and
26 diode D5 and provides current to LEDs, attached at outputs Red Wire (+DC) and
27 Black Wire (GND). The flyback converter is responsive to a gate drive signal
28 applied to the gate of transistor Q1.

1 123. On information and belief, Zeus products include a current sensor for
2 sensing current to the LED array, the current sensor generating a sensed current
3 signal. For example, current sense resistor R35 generates a sensed current signal that
4 is proportional to the current through the LEDs. The current sense signal is applied
5 to the inverting input of comparator U2B.

6 124. On information and belief, Zeus products include a reference current
7 source for generating a reference signal. For example, a reference current source,
8 resistors R44 and R26, generate a reference signal that is applied to the non-
9 inverting input of comparator U2B.

10 125. On information and belief, Zeus products include a comparator for
11 comparing the sensed current signal to the reference signal, the
12 comparator generating a feedback signal. For example, the voltage across R35—
13 representative of the current through the LEDs—and a reference current source are
14 applied to the inverting and non-inverting terminals of comparator U2B,
15 respectively. The output of comparator U2B is a feedback signal that is applied, via
16 diode D8 and opto-isolator U3, to the VSENSE, pin 1 of IC U1.

17 126. On information and belief, Zeus products include a PWM control
18 IC responsive to the feedback signal, the PWM control IC generating the drive
19 signal. For example, IC U1 is a PWM control IC that creates a PWM drive signal
20 (GTDRV signal) driving switch Q1. The PWM drive signal is responsive to the
21 feedback signal applied to VSENSE, pin 1, of IC U1.

22 127. On information and belief, Zeus products include a power supply
23 selected from a group consisting of a buck-boost power supply, a boost power
24 supply, a buck power supply, and a flyback converter. For example, a flyback
25 converter, comprised of, at least, transformer T1 and diode D5, and provides current
26 to LEDs, attached at outputs Red Wire and Black Wire.

27
28

Infringing DLED-ARFK4 Products

128. On information and belief, ARFK4 products include a power supply for an LED light source, as shown for example in the schematics of Exhibit 18. The individual components cited below refer to Exhibit 18 unless stated otherwise.

129. On information and belief, ARFK4 products include a power supply, the power supply supplying current to the LED array and being responsive to a drive signal. For example, a flyback converter including transformer T1 and diode DS1 supplies current to Red Wire (L+) and Black Wire (L-) connected to LEDs. The flyback converter is responsive to a gate drive signal applied to the gate of transistor QM2.

130. On information and belief, ARFK4 products include a current sensor for sensing current to the LED array, the current sensor generating a sensed current signal. For example, current sense resistor RS3 senses and generates a current sensed signal (“-VO”) proportional to the current flowing through the LEDs. On information and belief, the current sensed signal is applied to Resistor RS5 propagates through opto-isolator PC1, appearing at the inverting terminal of Error Amplifier comparator of ICM1.

131. On information and belief, ARFK4 products include a reference current source for generating a reference signal. For example, on information and belief, a reference current source generates a reference signal of 2.5 volts to the non-inverting input of Error Amplifier comparator.

132. On information and belief, ARFK4 products include a PWM control IC responsive to the feedback signal, the PWM control IC generating the drive signal. For example, on information and belief, the voltage across RS3—representative of the current through the LEDs—and a reference current source are applied to the inverting and non-inverting terminals of Error Amplifier comparator, respectively. On information and belief, the output of Error Amplifier comparator is a feedback signal that propagates to PWM control IC. On information and belief,

1 PWM control IC of ICM1 receives the feedback signal and generates a pulse-width
2 modulated drive signal, which is applied to the gate of transistor QM2.

3 133. On information and belief, ARFK4 products include a power supply
4 selected from a group consisting of a buck-boost power supply, a boost power
5 supply, a buck power supply, and a flyback converter. For example, a flyback
6 converter including transformer T1 and diode DS1 supplies current to Red Wire
7 (L+) and Black Wire (L-) connected to LEDs.

8 **Infringing DSW-LED Products**

9 134. On information and belief, DSW-LED products contain a power supply
10 for an LED light as shown for example in the schematics of Exhibit 20. The
11 individual components cited below refer to Exhibit 20 unless stated otherwise.

12 135. On information and belief, DSW-LED products include a power
13 supply, the power supply supplying current to the LED array and being responsive
14 to a drive signal. For example, a flyback converter, comprising at least transformer
15 T1 and diode D7, provides current to LEDs, attached at outputs Red Wire and Blue
16 Wire. The flyback converter is responsive to a gate drive signal applied to the gate
17 of transistor Q1.

18 136. On information and belief, DSW-LED products include a current
19 sensor for sensing current to the LED array, the current sensor generating a sensed
20 current signal. For example, current sense resistor R25, generates a sensed current
21 signal that is proportional to the current through the LEDs. The current sense signal
22 is applied to the inverting input of comparator U3B.

23 137. On information and belief, DSW-LED products include a reference
24 current source for generating a reference signal. For example, Violet Wire
25 (PWM/Dimmer Control Input) generates a reference signal that is applied to the
26 non-inverting input of comparator U3B.

27 138. On information and belief, DSW-LED products include a PWM control
28 IC responsive to the feedback signal, the PWM control IC generating the drive

1 signal. For example, the voltage across R25—representative of the current through
 2 the LEDs—and a reference current source are applied to the inverting and non-
 3 inverting terminals of comparator U3B, respectively. The output of comparator U3B
 4 is a feedback signal that is applied, via diode D9 and opto-isolator U2, to the INV
 5 pin 1 of IC U1. IC U1 is a PWM control IC that creates a PWM drive signal (GD
 6 signal) driving transistor Q1. The PWM drive signal is responsive to the feedback
 7 signal applied to INV pin 1 of IC U1.

8 139. On information and belief, DSW-LED products include a power supply
 9 selected from a group consisting of a buck-boost power supply, a boost power
 10 supply, a buck power supply, and a flyback converter. For example, a flyback
 11 converter, comprised of, at least, transformer T1 and diode D7, and provides current
 12 to LEDs, attached at outputs Red Wire and Blue Wire.

13 **Infringing D404-LED (Previous Generation) Products**

14 140. On information and belief, D404 products contain a power supply for
 15 an LED light source as shown for example in the schematic of Exhibit 27. The
 16 individual components of D404-LED cited below refer to Exhibit 27 unless stated
 17 otherwise.

18 141. On information and belief, D404 products include a power supply, the
 19 power supply supplying current to the LED array and being responsive to a drive
 20 signal. For example, a flyback converter, comprised of, at least, transformer T1 and
 21 diode D5, and provides current to LEDs, attached at outputs +DC and GND. The
 22 flyback converter is responsive to a gate drive signal applied to the gate of transistor
 23 Q1.

24 142. On information and belief, D404 products include a current sensor for
 25 sensing current to the LED array, the current sensor generating a sensed current
 26 signal. For example, current sense resistor R25 generates a sensed current signal that
 27 is proportional to the current through the LEDs. The current sense signal is applied
 28 to the inverting input of comparator U2B.

1 143. On information and belief, D404 products include a reference current
2 source for generating a reference signal. For example, reference signal V_s is applied
3 via R25, U5, and R27 to the non-inverting input of comparator U2B.

4 144. On information and belief, D404 products include a PWM control
5 IC responsive to the feedback signal, the PWM control IC generating the drive
6 signal. For example, the voltage across R25—representative of the current through
7 the LEDs—and a reference current source are applied to the inverting and non-
8 inverting terminals of comparator U2B, respectively. The output of comparator U2B
9 is a feedback signal that is applied, via diode D6 and opto-isolator U3, to the FB pin
10 1 of IC U1. IC U1 is a PWM control IC that creates a PWM drive signal, (GATE
11 signal) driving switch Q1. The PWM drive signal is responsive to the feedback
12 signal applied to FB pin 1 of IC U1.

13 145. On information and belief, D404 products include a power supply
14 selected from a group consisting of a buck-boost power supply, a boost power
15 supply, a buck power supply, and a flyback converter. For example, a flyback
16 converter, comprised of, at least, transformer T1 diode D5 and provides current to
17 LEDs, attached at outputs +DC and GND.

18 146. The full extent of Defendant's infringement is not presently known to
19 Philips Lighting. On information and belief, Defendant has made and sold, or will
20 make and sell, products under different names or part numbers that infringe the '890
21 Patent in a similar manner. Philips Lighting makes this preliminary identification of
22 infringing products and infringed claims in Count Two without the benefit of
23 discovery or claim construction in this action, and expressly reserves the right to
24 augment, supplement, and revise its identifications based on additional information
25 obtained through discovery or otherwise.

26 147. Philips Lighting has suffered and continues to suffer damages as a
27 result of Defendant's infringement of the '890 Patent in an amount to be determined
28 at trial.

1 148. Defendant's infringement of the '890 Patent is causing irreparable harm
 2 for which Philips Lighting has no adequate remedy at law unless Defendant is
 3 enjoined by this Court. Under 35 U.S.C. § 283, Philips Lighting is entitled to a
 4 permanent injunction against further infringement of the '890 Patent.

5 149. Defendant has been aware of and has had notice of the '890 Patent and
 6 its infringement of the '890 Patent at least as early as the service of this Complaint.

7 **COUNT THREE**

8 **INFRINGEMENT OF U.S. PATENT NO. 7,038,399**

9 150. Philips Lighting incorporates by reference the allegations in paragraphs
 10 1-149 as if fully set forth herein.

11 151. On information and belief, Defendant has infringed and is infringing
 12 claims of the '399 Patent, including claim 7, in violation of 35 U.S.C. § 271(a) by
 13 manufacturing, using, offering to sell, selling, and/or importing infringing products.

14 152. Claim 7 of the '399 Patent recites:

15 An illumination apparatus, comprising:

16 at least one LED; and

17 at least one controller coupled to the at least one LED and
 18 configured to receive a power-related signal from an alternating
 19 current (A.C.) power source that provides signals other than a
 20 standard A.C. line voltage, the at least one controller further
 21 configured to provide power to the at least one LED based on the
 22 power-related signal,

23 wherein the A.C. power source is an A.C. dimmer circuit,

24 wherein the A.C. dimmer circuit is controlled by a user
 25 interface to vary the power-related signal, and wherein the at
 26 least one controller is configured to variably control at least one
 27 parameter of light generated by the at least one LED in response
 28 to operation of the user interface, and

1 wherein the operation of the user interface varies a duty
2 cycle of the power-related signal, and wherein the at least one
3 controller is configured to variably control the at least one
4 parameter of the light based at least on the variable duty cycle of
5 the power-related signal.

6 153. On information and belief, Defendant has directly infringed and is
7 directly infringing claim 7 of the '399 Patent by making, using, offering to sell,
8 selling, and/or importing at least Zeus, AFR56, and D404-LED products in this
9 judicial district and elsewhere in the United States.

10 **Infringing Zeus Products**

11 154. On information and belief, Zeus products contain an illumination
12 apparatus as shown for example in the schematics of Exhibit 10. The individual
13 components cited below refer to Exhibit 10 unless stated otherwise.

14 155. On information and belief, Zeus products include at least one LED. For
15 example, Red Wire (+DC) and Black Wire (GND) pins are connected to at least one
16 LED.

17 156. On information and belief, Zeus products include at least one controller
18 coupled to the at least one LED and configured to receive a power-related signal
19 from an alternating current (A.C.) power source that provides signals other than a
20 standard A.C. line voltage, the at least one controller further configured to provide
21 power to the at least one LED based on the power-related signal. For example, a
22 controller—which includes IC U1 and flyback converter comprising transformer T1
23 and diode D5 is configured to receive a phase-cut A.C. power signal from Black
24 Wire (L) and White Wire (N) input lines (the controller is configured “For Use with
25 Incandescent Dimmers,” see Exhibit 12). The controller is thus configured to control
26 the LEDs, via the flyback converter, based on the phase-cut A.C. power signal.

27 157. On information and belief, the controllers in the Zeus products are
28 configured to receive a power-related signal from an A.C. dimmer circuit, wherein

1 the A.C. dimmer circuit is controlled by a user interface to vary the power-related
 2 signal, and wherein the at least one controller is configured to variably control at
 3 least one parameter of light generated by the at least one LED in response to
 4 operation of the user interface. For example, a controller is configured to be used
 5 with an incandescent dimmer, which varies the duty cycle of the dimmed signal
 6 according to the operation of a user interface such as a dimming switch. (See
 7 Exhibit 12, “For Use with Incandescent Dimmers”).

8 158. On information and belief, Zeus products include a controller wherein
 9 operation of the user interface varies a duty cycle of the power-related signal, and
 10 wherein the at least one controller is configured to variably control the at least one
 11 parameter of the light based at least on the variable duty cycle of the power-related
 12 signal. For example, IC U1 conditions the output voltage and current provided by
 13 the flyback converter in order to variably control the intensity of the LEDs in
 14 response to the variation of the duty cycle of the phase-cut input A.C. signal, based
 15 on the operation of a user interface. (See Exhibit 12, “For Use with Incandescent
 16 Dimmers”).

17 **Infringing AFR56 Products**

18 159. On information and belief, AFR56 products include an illumination
 19 apparatus as shown for example in the photographs of Exhibit 23. The individual
 20 components cited below refer to Exhibit 24 unless stated otherwise.

21 160. On information and belief, AFR56 products include at least one LED.
 22 For example, +Red and –BLK GND pins are connected to at least one LED.

23 161. On information and belief, AFR56 products include at least one
 24 controller coupled to the at least one LED and configured to receive a power-related
 25 signal from an alternating current (A.C.) power source that provides signals other
 26 than a standard A.C. line voltage, the at least one controller further configured to
 27 provide power to the at least one LED based on the power-related signal. For
 28 example, a controller—which includes IC U1 and transistor Q1—is configured to

1 receive a phase-cut A.C. power signal from L and N input lines (the controller is
2 configured to receive a signal from an incandescent dimmer, see Exhibit 25,
3 “Dimmable A.C. Input”) The controller is configured to control the LEDs, via
4 transistor Q1, based on the phase-cut A.C. power signal.

5 162. On information and belief, the controllers in the AFR56 products are
6 configured to receive a power-related signal from an A.C. dimmer circuit, wherein
7 the A.C. dimmer circuit is controlled by a user interface to vary the power-related
8 signal, and wherein the at least one controller is configured to variably control at
9 least one parameter of light generated by the at least one LED in response to
10 operation of the user interface. For example, a controller is configured to be used
11 with dimmable AC input, which varies the duty cycle of the dimmed signal
12 according to the operation of a user interface such as a dimming switch. (See
13 Exhibit 25, “Dimmable A.C. Input.”)

14 163. On information and belief, AFR56 products include a controller
15 wherein operation of the user interface varies a duty cycle of the power-related
16 signal, and wherein the at least one controller is configured to variably control the at
17 least one parameter of the light based at least on the variable duty cycle of the
18 power-related signal. For example, IC U1 conditions the output voltage and current
19 provided by transistor Q1 in order to variably control the intensity of the LEDs in
20 response to the variation of the duty cycle of the phase-cut input A.C. signal, based
21 on the operation of user interface. (See Exhibit 25, “Dimmable A.C. Input.”)

22 **Infringing D404-LED (Previous Generation) Products**

23 164. On information and belief, D404 products include an illumination
24 apparatus as shown for example in the schematics of Exhibit 27. The individual
25 components of D404-LED cited below refer to Exhibit 27 unless stated otherwise.

26 165. On information and belief, D404 products include at least one LED.
27 For example, +DC and GND pins are connected to at least one LED.
28

1 166. On information and belief, D404 products include at least one
2 controller coupled to the at least one LED and configured to receive a power-related
3 signal from an alternating current (A.C.) power source that provides signals other
4 than a standard A.C. line voltage, the at least one controller further configured to
5 provide power to the at least one LED based on the power-related signal. For
6 example, a controller—which includes IC U1 and flyback converter comprising
7 transformer T1 and diode D5—is configured to receive a phase-cut A.C. power
8 signal from L and N input lines (“For Use with ELV Dimmers,” see Exhibit 29) The
9 controller is thus configured to control the LEDs, via the flyback converter, based
10 on the phase-cut A.C. power signal.

11 167. On information and belief, the controllers in the D404 products are
12 configured to receive a power-related signal from an A.C. dimmer circuit, wherein
13 the A.C. dimmer circuit is controlled by a user interface to vary the power-related
14 signal, and wherein the at least one controller is configured to variably control at
15 least one parameter of light generated by the at least one LED in response to
16 operation of the user interface. For example, a controller is configured to be used
17 with an ELV dimmer, which varies the duty cycle of the dimmed signal according to
18 the operation of a user interface such as a dimming switch. (“For Use with ELV
19 Dimmers”, see Exhibit 29)

20 168. On information and belief, D404 products include a controller wherein
21 operation of the user interface varies a duty cycle of the power-related signal, and
22 wherein the at least one controller is configured to variably control the at least one
23 parameter of the light based at least on the variable duty cycle of the power-related
24 signal. For example, IC U1 conditions the output voltage and current provided by
25 the flyback converter in order to variably control the intensity of the LEDs in
26 response to the variation of the duty cycle of the phase-cut input A.C. signal, based
27 on the operation of user interface. (“For Use with ELV Dimmers”, see Exhibit 29)
28

169. Claim 17 of the '399 Patent recites:

An illumination apparatus, comprising:

at least one LED; and

at least one controller coupled to the at least one LED and configured to receive a power-related signal from an alternating current (A.C.) power source that provides signals other than a standard A.C. line voltage, the at least one controller further configured to provide power to the at least one LED based on the power-related signal,

wherein the A.C. power source is an A.C. dimmer circuit,

wherein the A.C. dimmer circuit is controlled by a user interface to vary the power-related signal, and wherein the at least one controller is configured to variably control at least one parameter of light generated by the at least one LED in response to operation of the user interface, and

wherein the at least one controller includes:

an adjustment circuit to variably control the at least one parameter of light based on the varying power-related signal; and power circuitry to provide at least the power to the at least one LED based on the varying power-related signal.

170. On information and belief, Defendant has directly infringed and is directly infringing claim 17 of the '399 Patent by making, using, offering to sell, selling, and/or importing at least Zeus and D404 LED (previous generation) products in this judicial district and elsewhere in the United States.

Infringing Zeus Products

171. On information and belief, Zeus products contain an illumination apparatus as shown for example in schematics of Exhibit 10. The individual components of Zeus cited below refer to Exhibit 10 unless stated otherwise.

1 172. On information and belief, Zeus products include at least one LED. For
2 example, Red Wire (+DC) and Black Wire (GND) pins are connected to at least one
3 LED.

4 173. On information and belief, Zeus products include at least one controller
5 coupled to the at least one LED and configured to receive a power-related signal
6 from an alternating current (A.C.) power source that provides signals other than a
7 standard A.C. line voltage, the at least one controller further configured to provide
8 power to the at least one LED based on the power-related signal. For example, a
9 controller—which includes IC U1 and flyback converter comprising transformer T1
10 and diode D5—is configured to receive a phase-cut A.C. power signal from Black
11 Wire (L) and White Wire (N) input lines configured (“For Use with Incandescent
12 Dimmers,” Exhibit 12). The controller is thus configured to control the LEDs, via
13 the flyback converter, based on the phase-cut A.C. power signal.

14 174. On information and belief, the controllers in the Zeus products are
15 configured to receive a power-related signal from an A.C. dimmer circuit, wherein
16 the A.C. dimmer circuit is controlled by a user interface to vary the power-related
17 signal, and wherein the at least one controller is configured to variably control at
18 least one parameter of light generated by the at least one LED in response to
19 operation of the user interface. For example, a controller is configured to be used
20 with an incandescent dimmer, which varies the duty cycle of the dimmed A. C.
21 signal according to the operation of a user interface such as a dimming switch. (“For
22 Use with Incandescent Dimmers,” Exhibit 12).

23 175. On information and belief, Zeus products include an adjustment circuit
24 to variably control the at least one parameter of light based on the varying power-
25 related signal. For example, IC U1 conditions the output voltage and current
26 provided by the flyback converter in order to variably control the intensity of the
27 LEDs in response to the variation of the duty cycle of the phase-cut input A.C.

28

1 signal, based on the operation of user interface. (“For Use with Incandescent
2 Dimmers,” Exhibit 12).

3 176. On information and belief, Zeus products include power circuitry to
4 provide at least the power to the at least one LED based on the varying power-
5 related signal. For example, the controller includes IC U1 which variably controls
6 the intensity of the LEDs based on the phase-cut input A.C. signal (“For Use with
7 Incandescent Dimmers,” Exhibit 12). The controller also includes a flyback
8 converter, comprising transformer T1 and diode D5, which provides power to the
9 LED based on the phase-cut input A.C. signal.

10 **Infringing D404-LED (Previous Generation) Products**

11 177. On information and belief, D404 products include an illumination
12 apparatus as shown for example in the schematics of Exhibit 27. The individual
13 components of D404-LED cited below refer to Exhibit 27 unless stated otherwise.

14 178. On information and belief, D404 products include at least one LED.
15 For example, +DC and GND pins are connected to at least one LED.

16 179. On information and belief, D404 products include at least one
17 controller coupled to the at least one LED and configured to receive a power-related
18 signal from an alternating current (A.C.) power source that provides signals other
19 than a standard A.C. line voltage, the at least one controller further configured to
20 provide power to the at least one LED based on the power-related signal. For
21 example, a controller—which includes IC U1 and flyback converter comprising
22 transformer T1 and diode D5—is configured to receive a phase-cut A.C. power
23 signal from L and N input lines (“For Use with ELV Dimmers,” see Exhibit 29) The
24 controller is thus configured to control the LEDs, via the flyback converter, based
25 on the phase-cut A.C. power signal.

26 180. On information and belief, the controllers in the D404 products are
27 configured to receive a power-related signal from an A.C. dimmer circuit, wherein
28 the A.C. dimmer circuit is controlled by a user interface to vary the power-related

1 signal, and wherein the at least one controller is configured to variably control at
2 least one parameter of light generated by the at least one LED in response to
3 operation of the user interface. For example, a controller is configured to be used
4 with an ELV dimmer, which varies the duty cycle of the dimmed signal according to
5 the operation of a user interface such as a dimming switch. (“For Use with ELV
6 Dimmers,” see Exhibit 29).

7 181. On information and belief, D404 products include an adjustment circuit
8 to variably control the at least one parameter of light based on the varying power-
9 related signal. For example, IC U1 conditions the output voltage and current
10 provided by the flyback converter in order to variably control the intensity of the
11 LEDs in response to the variation of the duty cycle of the phase-cut input A.C.
12 signal, based on the operation of user interface. (“For Use with ELV Dimmers,” see
13 Exhibit 29).

14 182. On information and belief, D404 products include power circuitry to
15 provide at least the power to the at least one LED based on the varying power-
16 related signal. For example, the controller includes IC U1 which variably controls
17 the intensity of the LEDs based on the phase-cut input A.C. signal. The controller
18 also includes a flyback converter, comprising transformer T1 and diode D5, which
19 provides power to the LED based on the phase-cut input A.C. signal.

20 183. The full extent of Defendant’s infringement is not presently known to
21 Philips Lighting. On information and belief, Defendant has made and sold, or will
22 make and sell, products under different names or part numbers that infringe the ’399
23 Patent in a similar manner. Philips Lighting makes this preliminary identification of
24 infringing products and infringed claims in Count Three without the benefit of
25 discovery or claim construction in this action, and expressly reserves the right to
26 augment, supplement, and revise its identifications based on additional information
27 obtained through discovery or otherwise.

28

1 184. Philips Lighting has suffered and continues to suffer damages as a
2 result of Defendant's infringement of the '399 Patent in an amount to be determined
3 at trial.

4 185. Defendant's infringement of the '399 Patent is causing irreparable harm
5 for which Philips Lighting has no adequate remedy at law unless Defendant is
6 enjoined by this Court. Under 35 U.S.C. § 283, Philips Lighting is entitled to a
7 permanent injunction against further infringement of the '399 Patent.

8 186. On information and belief, Defendant has been aware of and has had
9 notice and actual knowledge of the '399 Patent and its infringement of the '399
10 Patent at least as early as October 21, 2013, and Defendant's infringement of the
11 '399 Patent has been willful. For example, Mr. Sam Sinai, CEO of Defendant, was
12 notified on several occasions before the present action was filed that Defendant's
13 products were infringing the '399 Patent. Exhibit 31. Defendant's pre-suit
14 knowledge of the '399 Patent and failure to substantively address Philips Lighting's
15 numerous notifications of infringement are sufficient to support a plausible
16 inference that Defendant's infringement was willful and egregious, warranting
17 enhancement of damages under 35 U.S.C. § 284, and attorneys' fees and costs
18 incurred under 35 U.S.C. § 285.

19 **COUNT FOUR**

20 **INFRINGEMENT OF U.S. PATENT NO. 7,262,559**

21 187. Philips Lighting incorporates by reference the allegations in paragraphs
22 1-186 as if fully set forth herein.

23 188. On information and belief, Defendant has infringed and is infringing
24 claims of the '559 Patent, including claim 6 in violation of 35 U.S.C. § 271(a) by
25 manufacturing, using, offering to sell, selling, and/or importing infringing products.

26 189. Claim 6 of the '559 Patent recites:

27 A power supply for an LED light source, said power supply
28 comprising:

1 a power converter operable to provide a regulated power
2 including a LED current and a LED voltage;

3 an LED control switch operable to control a flow of the
4 LED current through the LED light source; and

5 a detection circuit operable to provide a detection signal
6 indicative of an operating condition of the LED light source
7 associated with the LED voltage,

8 wherein said LED control switch is further operable to
9 clamp a peak of the LED current during an initial loading stage
10 of the LED light source,

11 wherein the detection signal has a first level
12 representative of a load condition of the LED light source, and

13 wherein the detection signal has a second level
14 representative of either a short condition or an open condition of
15 the LED light source.

16 190. On information and belief, Defendant has directly infringed and is
17 directly infringing claim 6 of the '559 Patent by making, using, offering to sell,
18 selling, and/or importing at least Lucera, Zeus, Cloud, ARFK4, DSW-LED, D404-
19 LED (current generation), and D211-LED products in this judicial district and
20 elsewhere in the United States.

21 **Infringing Lucera Products**

22 191. On information and belief, Lucera products contain a power supply for
23 an LED light source as shown for example in the schematics of Exhibit 7. The
24 individual components cited below refer to Exhibit 7 unless stated otherwise.

25 192. On information and belief, Lucera products include a power converter
26 operable to provide a regulated power including a LED current and a LED voltage.
27 For example, a flyback converter comprising, at least, transformer T2 and diode
28 D11, provides regulated power, including an LED current and an LED voltage, to

1 the LEDs connected to outputs labeled Red Wire (VOUT1) and Black Wire
2 (GND1).

3 193. On information and belief, Lucera products include a LED control
4 switch operable to control a flow of the LED current through the LED light source.
5 For example, the control switch (Exhibit 8) of IC U1 controls the flow of LED
6 current supplied by the flyback converter through the LEDs.

7 194. On information and belief, Lucera products include a detection circuit
8 operable to provide a detection signal indicative of an operating condition of the
9 LED light source associated with the LED voltage. For example, Internal UV
10 Comparator detection circuit (Exhibit 8) of IC U1 provides a detection signal (signal
11 output to Soft Start, and Shutdown/Auto-Restart, Exhibit 8), indicative of an
12 operating condition (e.g. a short or connected LED) the LED light associated with
13 the LED voltage. The value of Internal UV Comparator detection circuit output
14 signal will be indicative of an operating condition of the LEDs, and will be
15 determined by value of the voltage across resistors R15 and R16 which create a
16 signal that propagates through transistor Q2, opto-coupler U2, and transistor Q1, and
17 appears at C pin 1 of IC U1.

18 195. On information and belief, Lucera products include a LED control
19 switch further operable to clamp a peak of the LED current during an initial loading
20 stage of the LED light source. For example, IC U1 includes a soft-start function
21 (Exhibit 8) that serves to clamp the LED current during an initial loading stage of
22 the LED light source.

23 196. On information and belief, Lucera products provide a detection signal
24 with a first level representative of a load condition of the LED light source, and also
25 provide a detection signal with a second level representative of either a short
26 condition or an open condition of the LED light source. For example, Internal UV
27 Comparator detection circuit (Exhibit 8) compares the input at the non-inverting
28 terminal (Receiving signal from control pin C, which is the signal originating at R15

1 and R16), to a reference signal at the inverting input, which is between 4.8-5.8V. If
 2 the input to the non-inverting terminal is less than the reference signal at the
 3 inverting terminal, the Internal UV comparator detection circuit will output a low
 4 signal indicative of a load condition of the LED light source. If the input to the non-
 5 inverting terminal is greater than the reference signal at the inverting terminal, the
 6 Internal UV Comparator detection circuit will output a high signal indicative of a
 7 short condition of the LED light source.

8 **Infringing Zeus Products**

9 197. On information and belief, Zeus products contain a power supply for an
 10 LED light source as shown for example in schematics of Exhibit 10. The individual
 11 components cited below refer to Exhibit 10 unless stated otherwise.

12 198. On information and belief, Zeus products include a power converter
 13 operable to provide a regulated power including a LED current and a LED voltage.
 14 For example, a flyback converter comprising, at least, transformer T1 and diode D5
 15 provides regulated power, including an LED current and an LED voltage, to the
 16 LEDs connected to the outputs labeled Red Wire (+DC) and Black Wire (GND).

17 199. On information and belief, Zeus products include a LED control switch
 18 operable to control a flow of the LED current through the LED light source. For
 19 example, control switch Q1 controls the flow of current supplied by the flyback
 20 converter through the LEDs.

21 200. On information and belief, Zeus products include a detection circuit
 22 operable to provide a detection signal indicative of an operating condition of the
 23 LED light source associated with the LED voltage. For example, Inhibit detection
 24 circuit (Exhibit 11) of IC U1 provides a detection signal (signal output to AND gate,
 25 Exhibit 11) indicative of an operating condition (e.g. a short or connected LED) of
 26 the LED light associated with the LED voltage. The value of Inhibit detection circuit
 27 output signal will be indicative of an operating condition of the LEDs, and will be
 28 determined by value of the voltage across the LEDs, which appears across resistors

1 R23 and R24 and the non-inverting input of differential amplifier U2A. Differential
2 amplifier U2A creates a signal that propagates through opto-isolator U3 and appears
3 at VAOUT pin 2 of IC U1 and the non-inverting terminal of Inhibit detection
4 circuit.

5 201. On information and belief, Zeus products include a LED control switch
6 further operable to clamp a peak of the LED current during an initial loading stage
7 of the LED light source. For example, IC U1 includes a “start up with low current
8 consumption” function that serves to clamp the LED current during an initial
9 loading stage of the LED light source.

10 202. On information and belief, Zeus products provide a detection signal
11 with a first level representative of a load condition of the LED light source, and also
12 provide a detection signal with a second level representative of either a short
13 condition or an open condition of the LED light source. For example, Inhibit
14 detection circuit (Exhibit 11) compares the input at the non-inverting terminal to 2.2
15 V reference signal at the inverting terminal. If the input to the non-inverting terminal
16 is less than the reference signal at the inverting terminal, the Inhibit detection circuit
17 will output a low signal indicative of a load condition of the LED light source. If the
18 input to the non-inverting terminal is greater than the reference signal at the
19 inverting terminal, the comparator will output a high signal indicative of an open
20 condition of the LED light source.

21 **Infringing Cloud Products**

22 203. On information and belief, Cloud products include a power supply for
23 an LED light source as shown for example in the schematics of Exhibit 14. The
24 individual components of Cloud cited below refer to Exhibit 14 unless stated
25 otherwise.

26 204. On information and belief, Cloud products include a power converter
27 operable to provide a regulated power including a LED current and a LED voltage.
28 For example, a flyback converter comprising, at least, transformer T2 and diode

1 D22 provides regulated power, including an LED current and an LED voltage, to
2 LEDs connected to the Red Wire (LED1+) and the Blue Wire (LED1-).

3 205. On information and belief, Cloud products include a LED control
4 switch operable to control a flow of the LED current through the LED light source.
5 For example, control switch Q3 controls the flow of current supplied by the flyback
6 converter through the LEDs.

7 206. On information and belief, Cloud products include a detection circuit
8 operable to provide a detection signal indicative of an operating condition of the
9 LED light source associated with the LED voltage. For example, overvoltage
10 detection circuit (Exhibit 15) of IC U3 provides a detection signal indicative of an
11 operating condition (e.g. normal operation or an overvoltage condition) of the LED
12 light associated with the LED voltage. The value of overvoltage detection circuit
13 output signal will be indicative of an operating condition of the LEDs, and will be
14 determined by the value of the voltage across the LEDs, which appears across
15 resistors R40 and R41 and propagates through opto-isolator U1, appearing at INV
16 pin 1 of IC U3 and the input of detection circuit (Exhibit 15).

17 207. On information and belief, Cloud products include a LED control
18 switch further operable to clamp a peak of the LED current during an initial loading
19 stage of the LED light source. For example, IC U3 provides “ultra-low ($\leq 70 \mu\text{A}$)
20 start-up current” (Exhibit 15) which serves to clamp the LED current during an
21 initial loading stage of the LED light source.

22 208. On information and belief, Cloud products provide a detection signal
23 with a first level representative of a load condition of the LED light source, and also
24 provide a detection signal with a second level representative of either a short
25 condition or an open condition of the LED light source. For example, overvoltage
26 detection circuit (Exhibit 15) outputs a first level signal if an overvoltage condition
27 is not present, and a second level signal if an overvoltage condition (e.g., a short or
28 open) is present.

Infringing DLED-ARFK4 Products

209. On information and belief, ARFK4 products include a power supply for an LED light source as shown for example in the schematics of Exhibit 18. The individual components cited below refer to Exhibit 18 unless stated otherwise.

210. On information and belief, ARFK4 products include a power converter operable to provide a regulated power including a LED current and a LED voltage. For example, a flyback converter comprising, at least, transformer T1 and diode DS1 provides regulated power, including an LED current and an LED voltage, to the LEDs connected to outputs Red (L+) and Black (L-) pins.

211. On information and belief, ARFK4 products include a LED control switch operable to control a flow of the LED current through the LED light source. For example, control switch QM2 controls the flow of current supplied by the flyback converter through the LEDs.

212. On information and belief, ARFK4 products include a detection circuit operable to provide a detection signal indicative of an operating condition of the LED light source associated with the LED voltage. For example, on information and belief, Error Amplifier detection circuit of ICM1 provides a detection signal (signal output to multiplier) indicative of an operating condition (e.g. a short or connected LED) of the LED light associated with the LED voltage. The value of Error Amplifier detection circuit output signal will be indicative of an operating condition of the LEDs, and will be determined by value of the voltage across the LEDs which is applied to Resistors RS2 and RS6 and propagates through opto-isolator PC1 and appears at FB pin 1 of IC ICM1 and the input of the inverting terminal of Error Amplifier detection circuit.

213. On information and belief, ARFK4 products include a LED control switch further operable to clamp a peak of the LED current during an initial loading stage of the LED light source. For example, on information and belief, IC ICM1

1 includes a “low start-up current” function that serves to clamp the LED current
2 during an initial loading stage of the LED light source.

3 214. On information and belief, ARFK4 products provide a detection signal
4 with a first level representative of a load condition of the LED light source, and also
5 provide a detection signal with a second level representative of either a short
6 condition or an open condition of the LED light source. For example, on
7 information and belief, Error Amplifier detection circuit compares the input at the
8 inverting terminal (Receiving signal from pin 1, which originates at LED output) to
9 a reference signal at the inverting input, which is 2.5 V. If the input to the inverting
10 terminal is less than the reference signal at the non-inverting terminal, the Error
11 Amplifier detection circuit will output a first signal indicative of a load condition of
12 the LED light source. If the input to the inverting terminal is greater than the
13 reference signal at the non-inverting terminal, the Error Amplifier detection circuit
14 will output a second signal indicative of a short or open condition of the LED light
15 source.

16 **Infringing DSW-LED Products**

17 215. On information and belief, DSW-LED products contain a power supply
18 for an LED light as shown for example in the schematics of Exhibit 20. The
19 individual components cited below refer to Exhibit 20 unless stated otherwise.

20 216. On information and belief, DSW-LED products include a power
21 converter operable to provide a regulated power including a LED current and a LED
22 voltage. For example, a flyback converter comprising, at least, transformer T1 and
23 diode D7 provides regulated power, including an LED current and an LED voltage,
24 to the LEDs connected to the outputs labeled Red Wire and Blue Wire.

25 217. On information and belief, DSW-LED products include a LED control
26 switch operable to control a flow of the LED current through the LED light source.
27 For example, control switch Q1 controls the flow of current supplied by the flyback
28 converter through the LEDs.

1 218. On information and belief, DSW-LED products include a detection
2 circuit operable to provide a detection signal indicative of an operating condition of
3 the LED light source associated with the LED voltage. For example, Overvoltage
4 detection circuit (Exhibit 21) of IC U3 provides a detection signal indicative of an
5 operating condition (e.g. normal operation or an overvoltage condition) of the LED
6 light associated with the LED voltage. The value of overvoltage detection circuit
7 output signal will be indicative of an operating condition of the LEDs, and will be
8 determined by value of the voltage across the LEDs, which appears across resistors
9 R35 and R36 and the non-inverting input of differential amplifier U3A. Differential
10 amplifier U3A generates a signal that propagates through opto-coupler U2 and
11 appears at INV pin 1 of IC U1 and the input of overvoltage detection circuit (Exhibit
12 21).

13 219. On information and belief, DSW-LED products include a LED control
14 switch further operable to clamp a peak of the LED current during an initial loading
15 stage of the LED light source. For example, IC U1 includes an “ultra-low ($\leq 70 \mu\text{A}$)
16 start-up current” function (Exhibit 21) that serves to clamp the LED current during
17 an initial loading stage of the LED light source.

18 220. On information and belief, DSW-LED products provide a detection
19 signal with a first level representative of a load condition of the LED light source,
20 and also provide a detection signal with a second level representative of either a
21 short condition or an open condition of the LED light source. For example,
22 Overvoltage detection circuit (Exhibit 21) outputs a first level signal if an
23 overvoltage condition is not present, and a second level signal if an overvoltage
24 condition (e.g., a short or open) is present.

25 **Infringing D404-LED (Current Generation) Products**

26 221. On information and belief, D404 products include a power supply for
27 an LED light source as shown for example in the schematics of Exhibit 14. The
28 individual components cited below refer to Exhibit 14 unless stated otherwise.

1 222. On information and belief, D404 products include a power converter
2 operable to provide a regulated power including a LED current and a LED voltage.
3 For example, a flyback converter comprising, at least, transformer T2 and diode
4 D22 provides regulated power, including an LED current and an LED voltage, to
5 LEDs connected to the Red Wire (LED1+) and the Blue Wire (LED1-).

6 223. On information and belief, D404 products include a LED control
7 switch operable to control a flow of the LED current through the LED light source.
8 For example, control switch Q3 controls the flow of current supplied by the flyback
9 converter through the LEDs.

10 224. On information and belief, D404 products include a detection circuit
11 operable to provide a detection signal indicative of an operating condition of the
12 LED light source associated with the LED voltage. For example, overvoltage
13 detection circuit (Exhibit 15) of IC U3 provides a detection signal indicative of an
14 operating condition (e.g. normal operation or an overvoltage condition) of the LED
15 light associated with the LED voltage. The value of overvoltage detection circuit
16 output signal will be indicative of an operating condition of the LEDs, and will be
17 determined by the value of the voltage across the LEDs, which appears across
18 resistors R40 and R41 and propagates through opto-isolator U1, appearing at INV
19 pin 1 of IC U3 and the input of detection circuit (Exhibit 15).

20 225. On information and belief, D404 products include a LED control
21 switch further operable to clamp a peak of the LED current during an initial loading
22 stage of the LED light source. For example, IC U3 provides “ultra-low ($\leq 70 \mu\text{A}$)
23 start-up current” (Exhibit 15) which serves to clamps the LED current during an
24 initial loading stage of the LED light source.

25 226. On information and belief, D404 products provide a detection signal
26 with a first level representative of a load condition of the LED light source, and also
27 provide a detection signal with a second level representative of either a short
28 condition or an open condition of the LED light source. For example, overvoltage

1 detection circuit (Exhibit 15) outputs a first level signal if an overvoltage condition
 2 is not present, and a second level signal if an overvoltage condition (e.g., a short or
 3 open) is present.

4 **Infringing D211-LED Products**

5 227. On information and belief, 211-LED products include a power supply
 6 for an LED light source as shown for example in the schematics of Exhibit 14. The
 7 individual components cited below refer to Exhibit 14 unless stated otherwise.

8 228. On information and belief, 211-LED products include a power
 9 converter operable to provide a regulated power including a LED current and a LED
 10 voltage. For example, a flyback converter comprising, at least, transformer T2 and
 11 diode D22 provides regulated power, including an LED current and an LED voltage,
 12 to LEDs connected to the Red Wire (LED1+) and the Blue Wire (LED1-).

13 229. On information and belief, 211-LED products include a LED control
 14 switch operable to control a flow of the LED current through the LED light source.
 15 For example, control switch Q3 controls the flow of current supplied by the flyback
 16 converter through the LEDs.

17 230. On information and belief, 211-LED products include a detection
 18 circuit operable to provide a detection signal indicative of an operating condition of
 19 the LED light source associated with the LED voltage. For example, overvoltage
 20 detection circuit (Exhibit 15) of IC U3 provides a detection signal indicative of an
 21 operating condition (e.g. normal operation or an overvoltage condition) of the LED
 22 light associated with the LED voltage. The value of overvoltage detection circuit
 23 output signal will be indicative of an operating condition of the LEDs, and will be
 24 determined by the value of the voltage across the LEDs, which appears across
 25 resistors R40 and R41 and propagates through opto-isolator U1, appearing at INV
 26 pin 1 of IC U3 and the input of detection circuit (Exhibit 15).

27 231. On information and belief, 211-LED products include a LED control
 28 switch further operable to clamp a peak of the LED current during an initial loading

1 stage of the LED light source. For example, IC U3 provides “ultra-low ($\leq 70 \mu\text{A}$)
2 start-up current” (Exhibit 15) which serves to clamp the LED current during an
3 initial loading stage of the LED light source.

4 232. On information and belief, 211-LED products provide a detection
5 signal with a first level representative of a load condition of the LED light source,
6 and also provide a detection signal with a second level representative of either a
7 short condition or an open condition of the LED light source. For example,
8 overvoltage detection circuit (Exhibit 15) outputs a first level signal if an
9 overvoltage condition is not present, and a second level signal if an overvoltage
10 condition (e.g., a short or open) is present.

11 233. Claim 10 of the '559 Patent recites:

12 A power supply for an LED light source, said power supply
13 comprising:

14 a power converter operable to provide a regulated power
15 including a LED current and a LED voltage;

16 an LED control switch operable to control a flow of the
17 LED current through the LED light source; and

18 a current sensor operable to sense the LED current
19 flowing through the LED light source, said current sensor
20 including

21 an [sic] differential amplifier, and

22 means for adjusting a gain of said differential amplifier,

23 wherein said LED control switch is further operable to
24 clamp a peak of the LED current during an initial loading stage
25 of the LED light source.

26 234. On information and belief, Defendant has directly infringed and is
27 directly infringing claim 10 of the '559 Patent by making, using, offering to sell,
28

1 selling, and/or importing at least Zeus, DSW-LED, and D404-LED (previous
2 generation) products in this judicial district and elsewhere in the United States.

3 **Infringing Zeus Products**

4 235. On information and belief, Zeus products contain a power supply for an
5 LED light source as shown for example in schematics of Exhibit 10. The individual
6 components cited below refer to Exhibit 10 unless stated otherwise.

7 236. On information and belief, Zeus products include a power converter
8 operable to provide a regulated power including a LED current and a LED voltage.
9 For example, a flyback converter, comprising at least, transistor T1 and diode D5
10 provides a regulated power output to LEDs, attached at outputs Red Wire (+DC)
11 and Black Wire (GND).

12 237. On information and belief, Zeus products include a LED control switch
13 operable to control a flow of the LED current through the LED light source. For
14 example, Control switch Q1 controls the flow of current supplied by the flyback
15 converter through the LEDs.

16 238. On information and belief, Zeus products include a current sensor
17 operable to sense the LED current flowing through the LED light source, the current
18 sensor including a differential amplifier, and means for adjusting a gain of the
19 differential amplifier. For example, current sensor, including at least current sense
20 resistor R35 and differential amplifier U2B, is operable to sense the current flowing
21 through the LEDs. The voltage across current sense resistor R35, proportional to the
22 current through the LEDs, appears at the inverting input of differential amplifier
23 U2B. The gain of differential amplifier U2B is adjusted according to the values of
24 resistor network comprising R21 and R20.

25 239. On information and belief, Zeus products include a LED control switch
26 that is operable to clamp a peak of the LED current during an initial loading stage of
27 the LED light source. For example, IC U1 includes a “start up with low current
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consumption” function (Exhibit 11) that serves to clamp the LED current during an initial loading stage of the LED light source.

Infringing DSW-LED Products

240. On information and belief, DSW-LED products contain a power supply for an LED light as shown for example in the schematics of Exhibit 20. The individual components cited below refer to Exhibit 20 unless stated otherwise.

241. On information and belief, DSW-LED products include a power converter operable to provide a regulated power including a LED current and a LED voltage. For example, a flyback converter, comprised of, at least, transistor T1 and diode D7 provides a regulated power output to LEDs, attached at outputs Red Wire and Blue Wire.

242. On information and belief, DSW-LED products include a LED control switch operable to control a flow of the LED current through the LED light source. For example, a control switch Q1 controls the flow of current supplied by the flyback converter through the LEDs.

243. On information and belief, DSW-LED products include a current sensor operable to sense the LED current flowing through the LED light source, the current sensor including a differential amplifier, and means for adjusting a gain of the differential amplifier. For example, current sensor, including at least current sense resistor R25 and differential amplifier U3B, is operable to sense the current flowing through the LEDs. The voltage across current sense resistor R25, proportional to the current through the LEDs, appears at the inverting input of differential amplifier U3B. The gain of differential amplifier U3B is adjusted according to the values of resistor network comprising R32 and R33.

244. On information and belief, DSW-LED products include a LED control switch that is operable to clamp a peak of the LED current during an initial loading stage of the LED light source. For example, IC U1 includes an “ultra-low ($\leq 70 \mu\text{A}$)

1 start-up current” function (Exhibit 21) that serves to clamp the LED current during
2 an initial loading stage of the LED light source.

3 **Infringing D404-LED (Previous Generation) Products**

4 245. On information and belief, D404 products contain a power supply for
5 an LED light source as shown for example in the schematic of Exhibit 27. The
6 individual components cited below refer to Exhibit 27 unless stated otherwise.

7 246. On information and belief, D404 products include a power converter
8 operable to provide a regulated power including a LED current and a LED voltage.
9 For example, a flyback converter, comprising at least, transformer T1 and diode D5
10 provides a regulated power output to LEDs, attached at outputs +DC and GND.

11 247. On information and belief, D404 products include a LED control
12 switch operable to control a flow of the LED current through the LED light source.
13 For example, a control switch Q1 controls the flow of current supplied by the
14 flyback converter through the LEDs.

15 248. On information and belief, D404 products include a current sensor
16 operable to sense the LED current flowing through the LED light source, the current
17 sensor including a differential amplifier, and means for adjusting a gain of the
18 differential amplifier. For example, current sensor, including at least current sense
19 resistor R25 and differential amplifier U2B, is operable to sense the current flowing
20 through the LEDs. The voltage across current sense resistor R25, proportional to the
21 current through the LEDs, appears at the inverting input of differential amplifier
22 U2B. The gain of differential amplifier U2B is adjusted according to the values of
23 resistor network comprising R20 and R21.

24 249. On information and belief, D404 products include a LED control
25 switch that is operable to clamp a peak of the LED current during an initial loading
26 stage of the LED light source. For example, IC U1 includes an “ultra-low ($\leq 50\mu\text{A}$)
27 start-up current” function (Exhibit 28) that serves to clamp the LED current during
28 an initial loading stage of the LED light source.

1 250. Claim 11 of the '559 Patent recites:

2 A power supply for an LED light source, said power supply
3 comprising:

4 a power converter operable to provide a regulated power
5 including a LED current and a LED voltage;

6 an LED control switch operable to control a flow of the
7 LED current through the LED light source; and

8 a voltage sensor operable to sense the LED voltage applied
9 to the LED light source, said voltage sensor including

10 an [sic] differential amplifier, and

11 means for adjusting a gain of said differential amplifier,

12 wherein said LED control switch is further operable to
13 clamp a peak of the LED current during an initial loading stage
14 of the LED light source.

15 251. On information and belief, Defendant has directly infringed and is
16 directly infringing claim 11 of the '559 Patent by making, using, offering to sell,
17 selling, and/or importing at least Zeus, DSW-LED, and D404-LED (Previous
18 Generation) products in this judicial district and elsewhere in the United States.

19 **Infringing Zeus Products**

20 252. On information and belief, Zeus products contain a power supply for an
21 LED light source as shown for example in schematics of Exhibit 10. The individual
22 components cited below refer to Exhibit 10 unless stated otherwise.

23 253. On information and belief, Zeus products include a power converter
24 operable to provide a regulated power including a LED current and a LED voltage.
25 For example, a flyback converter, comprised of, at least, transformer T1 and diode
26 D5 provides a regulated power output to LEDs, attached at outputs Red Wire (+DC)
27 and Black Wire (GND).
28

1 254. On information and belief, Zeus products include a LED control switch
2 operable to control a flow of the LED current through the LED light source. For
3 example, a control switch Q1 controls the flow of current supplied by the flyback
4 converter through the LEDs.

5 255. On information and belief, Zeus products include a voltage sensor
6 operable to sense the LED voltage applied to the LED light source, the voltage
7 sensor including a differential amplifier, and means for adjusting a gain of the
8 differential amplifier. For example, a voltage sensor includes differential amplifier
9 U2A and is operable to sense the voltage applied to the LEDs. The voltage across
10 LEDs (+DC) appears across resistors R23 and R24 at the inverting input of
11 differential amplifier U2A. The gain of differential amplifier U2A is adjusted
12 according to the resistor R22.

13 256. On information and belief, Zeus products include a LED control switch
14 that is operable to clamp a peak of the LED current during an initial loading stage of
15 the LED light source. For example, IC U1 includes a “start up with low current
16 consumption” function (Exhibit 11) that serves to clamp the LED current during an
17 initial loading stage of the LED light source.

18 **Infringing DSW-LED Products**

19 257. On information and belief, DSW-LED products contain a power supply
20 for an LED light as shown for example in the schematics of Exhibit 20. The
21 individual components cited below refer to Exhibit 20 unless stated otherwise.

22 258. On information and belief, DSW-LED products include a power
23 converter operable to provide a regulated power including a LED current and a LED
24 voltage. For example, a flyback converter, comprised of, at least, transformer T1
25 and diode D7 provides a regulated power output to LEDs, attached at outputs Red
26 Wire and Blue Wire.

27 259. On information and belief, DSW-LED products include a LED control
28 switch operable to control a flow of the LED current through the LED light source.

1 For example, a control switch Q1 controls the flow of current supplied by the
2 flyback converter through the LEDs.

3 260. On information and belief, DSW-LED products include a voltage
4 sensor operable to sense the LED voltage applied to the LED light source, the
5 voltage sensor including a differential amplifier, and means for adjusting a gain of
6 the differential amplifier. For example, a voltage sensor includes differential
7 amplifier U3A and is operable to sense the voltage applied to the LEDs. The voltage
8 across LEDs (V_{o+}) appears across resistors R35 and R36 at the inverting input of
9 differential amplifier U3A. The gain of differential amplifier U3A is adjusted
10 according to the resistor network comprising R34, R35, R36, and R37.

11 261. On information and belief, DSW-LED products include a LED control
12 switch that is operable to clamp a peak of the LED current during an initial loading
13 stage of the LED light source. For example, IC U1 includes an “ultra-low ($\leq 70 \mu A$)
14 start-up current” function (Exhibit 21) that serves to clamp the LED current during
15 an initial loading stage of the LED light source.

16 **Infringing D404-LED (Previous Generation) Products**

17 262. On information and belief, D404 products contain a power supply for
18 an LED light source as shown for example in the schematic of Exhibit 27. The
19 individual components cited below refer to Exhibit 27 unless stated otherwise.

20 263. On information and belief, D404 products include a power converter
21 operable to provide a regulated power including a LED current and a LED voltage.
22 For example, a flyback converter, comprising at least, transformer T1 and diode D5
23 provides a regulated power output to LEDs, attached at outputs +DC and GND.

24 264. On information and belief, D404 products include a LED control
25 switch operable to control a flow of the LED current through the LED light source.
26 For example, a control switch Q1 controls the flow of current supplied by the
27 flyback converter through the LEDs.

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1 265. On information and belief, D404 products include a voltage sensor
2 operable to sense the LED voltage applied to the LED light source, the voltage
3 sensor including a differential amplifier, and means for adjusting a gain of the
4 differential amplifier. For example, a voltage sensor includes differential amplifier
5 U2A and is operable to sense the voltage applied to the LEDs. The voltage across
6 LEDs (+DC) appears across resistors R23 and R24 at the non-inverting input of
7 differential amplifier U2A. The gain of differential amplifier U2A is adjusted
8 according to the resistor network comprising R22, R23, R24, and R25.

9 266. On information and belief, D404 products include a LED control
10 switch that is operable to clamp a peak of the LED current during an initial loading
11 stage of the LED light source. For example, IC U1 includes an “ultra-low ($\leq 50\mu\text{A}$)
12 start-up current” function (Exhibit 28) that serves to clamp the LED current during
13 an initial loading stage of the LED light source.

14 267. The full extent of Defendant’s infringement is not presently known to
15 Philips Lighting. On information and belief, Defendant has made and sold, or will
16 make and sell, products under different names or part numbers that infringe the ’559
17 Patent in a similar manner. Philips Lighting makes this preliminary identification of
18 infringing products and infringed claims in Count Five without the benefit of
19 discovery or claim construction in this action, and expressly reserves the right to
20 augment, supplement, and revise its identifications based on additional information
21 obtained through discovery or otherwise.

22 268. Philips Lighting has suffered and continues to suffer damages as a
23 result of Defendant’s infringement of the ’559 Patent in an amount to be determined
24 at trial.

25 269. Defendant’s infringement of the ’559 Patent is causing irreparable harm
26 for which Philips Lighting has no adequate remedy at law unless Defendant is
27 enjoined by this Court. Under 35 U.S.C. § 283, Philips Lighting is entitled to a
28 permanent injunction against further infringement of the ’559 Patent.

270. On information and belief, Defendant has been aware of and has had notice and actual knowledge of the '559 Patent and its infringement of the '559 Patent at least as early as October 21, 2013, and Defendant's infringement of the '559 Patent has been willful. For example, Mr. Sam Sinai, CEO of Defendant, was notified on several occasions before the present action was filed that Defendant's products were infringing the '559 Patent. Exhibit 31. Defendant's pre-suit knowledge of the '559 Patent and failure to substantively address Philips Lighting's numerous notifications of infringement are sufficient to support a plausible inference that Defendant's infringement was willful and egregious, warranting enhancement of damages under 35 U.S.C. § 284, and attorneys' fees and costs incurred under 35 U.S.C. § 285.

COUNT FIVE

INFRINGEMENT OF U.S. PATENT NO. 8,070,328

271. Philips Lighting incorporates by reference the allegations in paragraphs 1-270 as if fully set forth herein.

272. On information and belief, Defendant has infringed and is infringing claims of the '328 Patent, including claim 1 in violation of 35 U.S.C. § 271(a) by manufacturing, using, offering to sell, selling, and/or importing infringing products.

273. Claim 1 of the '328 Patent recites:

An LED downlight fixture, comprising:

an array of LEDs in thermal connectivity with a heatsink,
said array of LEDs positioned adjacent a first aperture of a multi-piece reflector assembly;

said multi-piece reflector assembly including:

a first reflector having said first aperture disposed in an upper portion of said first reflector and an opposed larger second aperture in a lower portion of said first reflector;

1 a second reflector having a first aperture positioned
2 adjacent said second aperture of said first reflector and a second
3 aperture opposite said first aperture of said second reflector and
4 defining a light exit passageway;

5 a diffuser positioned proximal to and extending across said
6 second aperture of said first reflector and said first aperture of
7 said second reflector.

8 274. On information and belief, Defendant has directly infringed and is
9 directly infringing claim 1 of the '328 Patent by making, using, offering to sell,
10 selling, and/or importing at least AFR56 products in this judicial district and
11 elsewhere in the United States.

12 **Infringing AFR56 Products**

13 275. On information and belief, AFR56 Products are LED downlight
14 fixtures as shown for example in Exhibit 23. The individual components cited below
15 refer to Exhibit 23 unless stated otherwise.

16 276. On information and belief, AFR56 products include an array of LEDs
17 in thermal connectivity with heat sink and are positioned adjacent to the first
18 aperture of a multi-piece reflector

19 277. On information and belief, AFR56 products include a multi-piece
20 reflector having a first aperture disposed in an upper portion of the first reflector and
21 a second, larger, aperture disposed in a lower portion.

22 278. On information and belief, AFR56 products include a multi-piece
23 reflector having a first aperture disposed in an upper portion of the second reflector
24 and a second, larger, aperture disposed in a lower portion. The first aperture of the
25 second reflector is adjacent to the second aperture of the second reflector. The
26 second reflector defines a light exit passageway.

1 279. On information and belief, AFR56 products include a diffuser
2 positioned proximal to and extending across the second aperture of the first reflector
3 and the first aperture of said second reflector.

4 280. The full extent of Defendant's infringement is not presently known to
5 Philips Lighting. On information and belief, Defendant has made and sold, or will
6 make and sell, products under different names or part numbers that infringe the '328
7 Patent in a similar manner. Philips Lighting makes this preliminary identification of
8 infringing products and infringed claims in Count Five without the benefit of
9 discovery or claim construction in this action, and expressly reserves the right to
10 augment, supplement, and revise its identifications based on additional information
11 obtained through discovery or otherwise.

12 281. Philips Lighting has suffered and continues to suffer damages as a
13 result of Defendant's infringement of the '328 Patent in an amount to be determined
14 at trial.

15 282. Defendant's infringement of the '328 Patent is causing irreparable harm
16 for which Philips Lighting has no adequate remedy at law unless Defendant is
17 enjoined by this Court. Under 35 U.S.C. § 283, Philips Lighting is entitled to a
18 permanent injunction against further infringement of the '328 Patent.

19 283. Defendant has been aware of and has had notice of the '328 Patent and
20 its infringement of the '328 Patent at least as early as the service of this Complaint.
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PRAYER FOR RELIEF

WHEREFORE, Philips Lighting prays for the following judgments and relief:

(a) A judgment that Defendant has infringed and is infringing the Patents-in-Suit;

(b) A permanent injunction against Defendant and its affiliates, subsidiaries, assigns, employees, agents or anyone acting in privity or concert from infringing the Patents-in-Suit, including enjoining the making, offering to sell, selling, using, or importing into the United States products claimed in any of the claims of the Patents-in-Suit; using or performing methods claimed in any of the claims of the Patents-in-Suit; inducing others to use and perform methods that infringe any claim of the Patents-in-Suit; or contributing to others using and performing methods that infringe any claim of the Patents-in-Suit, until the expiration of the Patents-in-Suit;

(c) An award of damages adequate to compensate Philips Lighting for Defendant's patent infringement, and an accounting to adequately compensate Philips Lighting for the infringement, including, but not limited to, lost profits and/or a reasonable royalty;

(d) An award of pre-judgment and post-judgment interest at the maximum rate allowed by law;

(e) An order finding that this is an exceptional case and awarding Philips Lighting its costs, expenses, disbursements, and reasonable attorneys' fees related to Defendant's patent infringement under 35 U.S.C. § 285 and all other applicable statutes, rules and common law; and

(f) Such other further relief, in law or equity, as this Court deems just and proper.

JURY TRIAL

In accordance with Rule 38 of the Federal Rules of Civil Procedure, Philips Lighting hereby demands a jury trial on all issues triable before a jury.

DATED: July 28, 2017

Respectfully Submitted,

BOND, SCHOENECK & KING PLLC

By: /s/ Jeremy P. Occek

JEREMY P. OCZEK (*Pro Hac Vice*)

SCHEPER KIM & HARRIS LLP

GREGORY A. ELLIS

ATTORNEYS FOR PLAINTIFFS

*Philips Lighting North America Corporation
and Philips Lighting Holding B.V.*